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# PREFACE.

THERE have been few Books treating of any Art or Science, which have maintained their ground in a manner unrivalled, ſo long as Mr. Miller's Gardener's Dictionary: near half a century having elapſed between the publication of the firſt edition in octavo, and the laſt in quarto.

The Firſt Edition, which is merely the germ of thoſe which ſucceeded in folio, is entitled "The "Gardener's and Floriſt's Dictionary, or a Complete Syſtem of Horticulture. By Philip Miller, "Gardener of the Botanic Garden at Chelſea. London 1724, printed for Charles Rivington." In two volumes octavo.

This new work was recommended by the moſt famous Gardeners and Nurſery-men of that time:—by Thomas Fairchild at Hoxton, Robert Furber at Kenſington, Robert Smith at Vauxhall, Samuel Driver at Lambeth, Moſes James at Standgate, Obadiah Low at Batterſea, Chriſtopher Gray at Fulham, Benjamin Whitmill at Hoxton, Francis Hunt at Putney, and William Gray junior at Fulham. I have reaſon to ſuppoſe that the above perſons were united in a Society for the improvement of Gardening: that Mr. Miller acted as their Secretary, and that this work was in ſome degree the produce of their joint efforts.

Mr. Miller naturally dedicated his book to Sir Hans Sloane, who at that time took the lead in Botany, and had recommended Mr. Miller to the Company of Apothecaries, to be the Gardener at their Botanic Garden at Chelſea.

In the Preface, he recommends as the greateſt encouragers of Gardening:—the Duke of Chandos, the Honorable Mr. Henry Compton Speaker of the Houſe of Commons, Sir Matthew Decker of Richmond famous for the improvement of Ananas in England, Mr. Warner of Rotherhith, famous for his vineyard and choice collection of fruits with great ſkill in the management of them, Mr. Charles Dubois of Mitcham, an early introducer of many uſeful improvements in Gardening and Planting when about forty years ſince the art ſeemed as it were but in its infancy, the Right Reverend Henry Compton late Lord Biſhop of London, an introducer and naturalizer of many curious exotic trees and plants, Dr. Udal [Uvedale] of Enfield, a curious collector and introducer of many rare exotic plants and flowers, Dr. Lloyd of Sheen in Surry, a curious collector and propagator of a conſiderable variety of rare flowers and plants.

Mr. Miller affirms that Gardening never arrived to any conſiderable pitch in England till within about thirty years laſt paſt. He profeſſes chiefly to collect and digeſt the labours of Fairchild, Bradley, Mortimer, Laurence, Switzer, Collins, Cook, &c. And he very frequently quotes Monſieur Liger, a French author, who publiſhed *Le Jardinier Fleuriſte et Hiſtoriographe, Amſt.* 1706. 12mo. with figures.

This edition being very ſcarce, I have here noted a few of the more intereſting particulars which it contains.

A large Aloe [Agave] flowered at Hampton Court in 1714, and was ſeventeen feet high. Another flowered in the Duke of Buckingham's Garden, St. James's Park, in 1716.

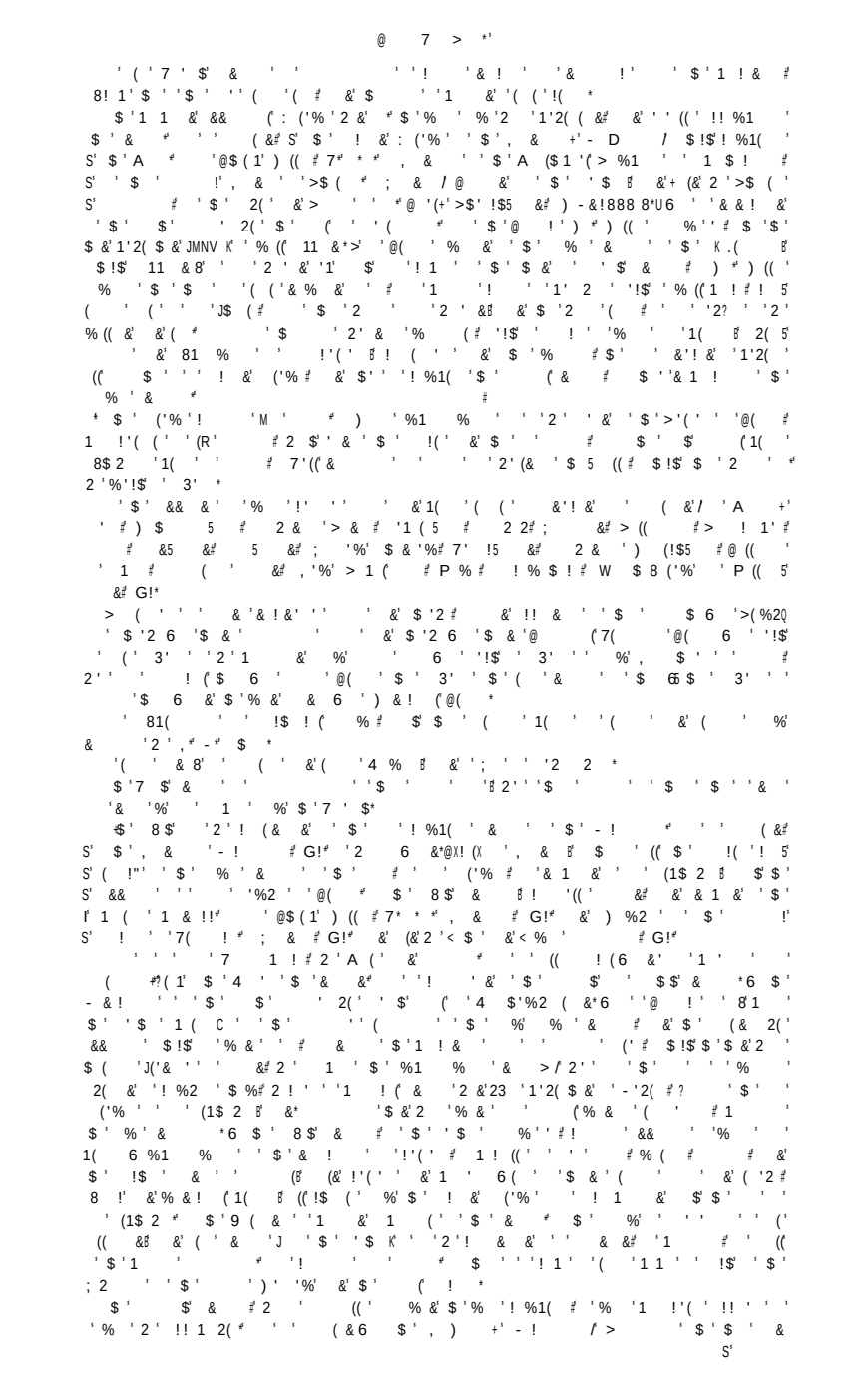
Brocoli was a ſtranger in England till within theſe five years. It was then called Sprout Colliflower or Italian Aſparagus.

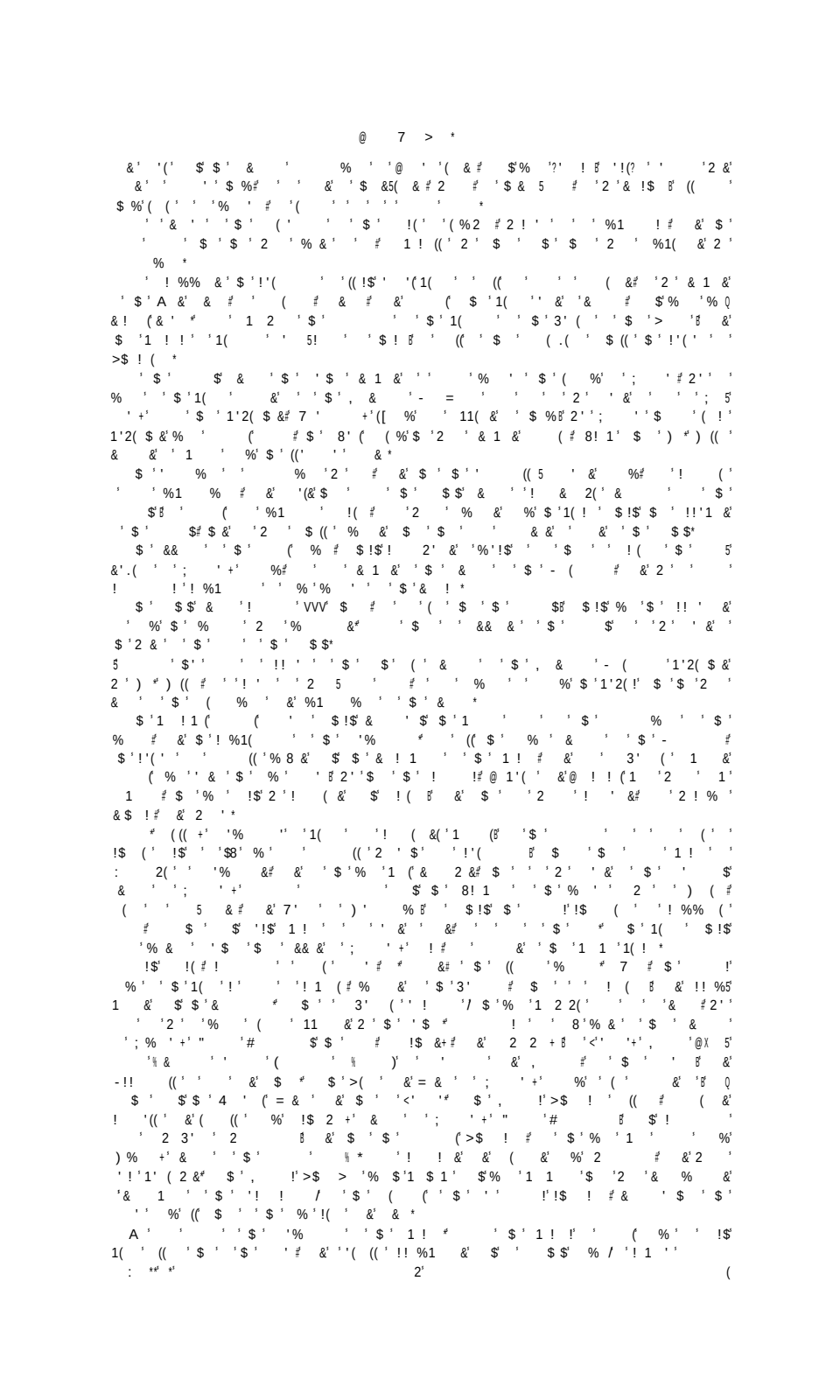
Mortimer had a walk of Cedars, of his own raiſing, in Eſſex.

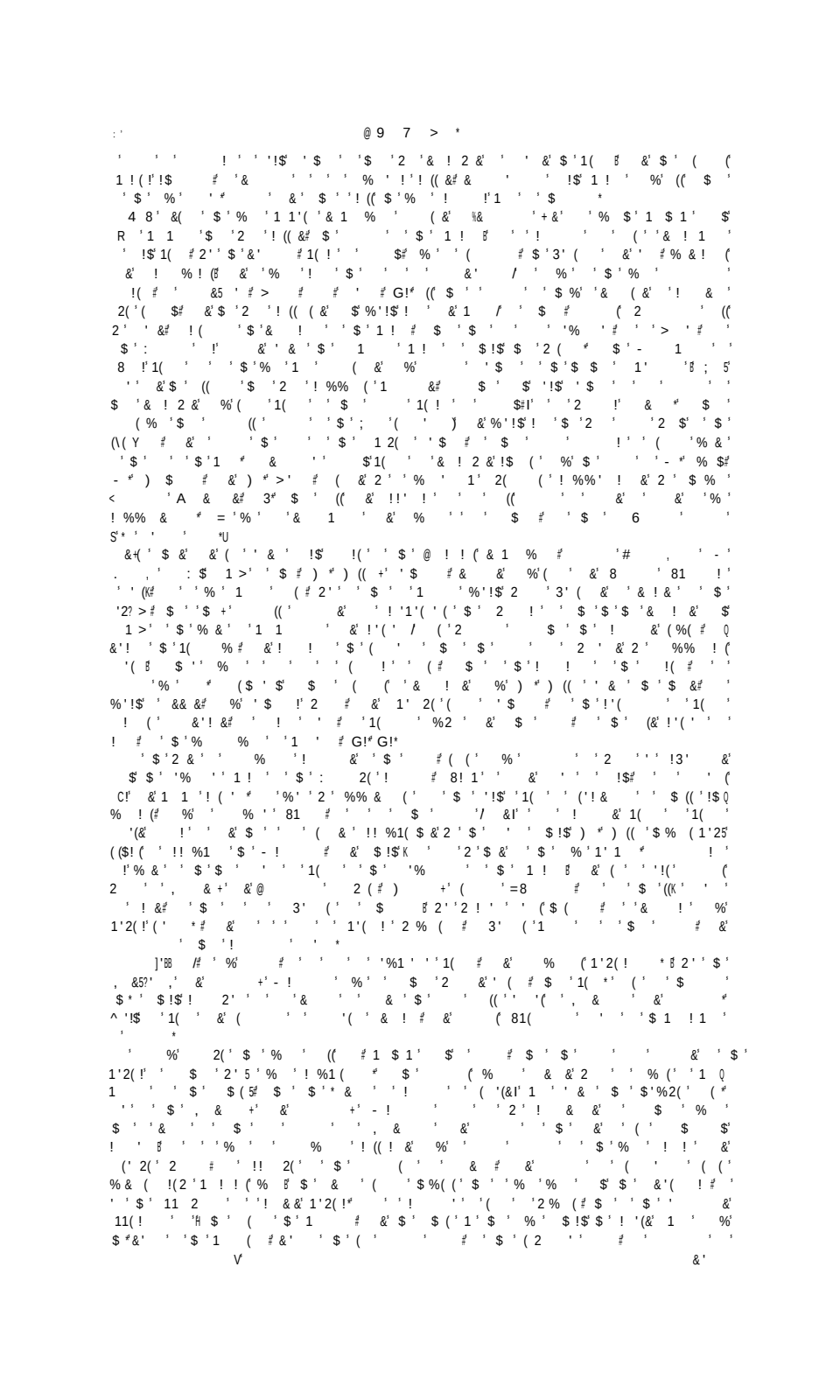
He mentions (from Bradley) a Holly at Trenſham in Surry, about ſixty feet in height.

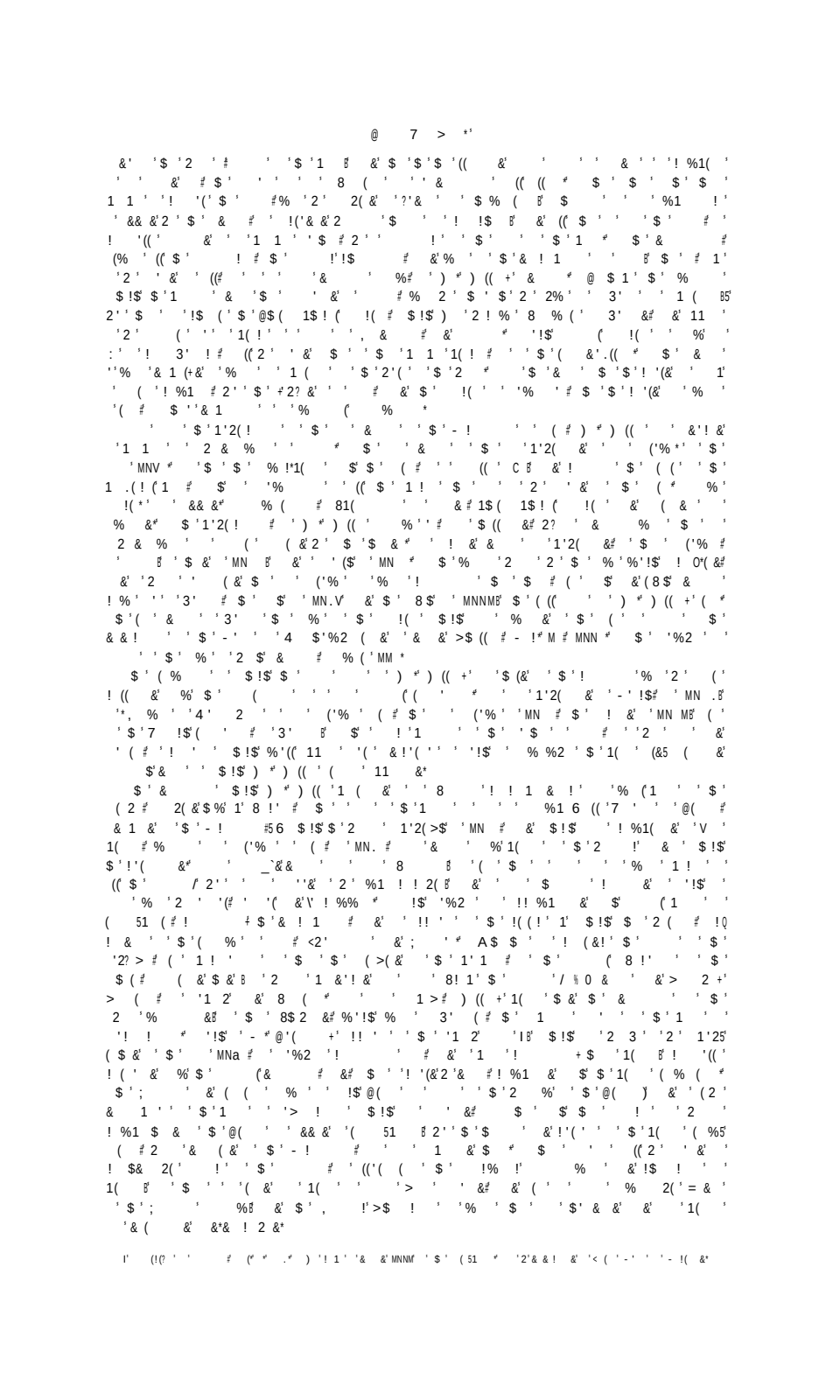
Thouſands of Ilexes were raiſed from the acorns by Robert Balle, Eſq. He tranſplanted a great number about thirty feet high, that had ſtood twenty years.

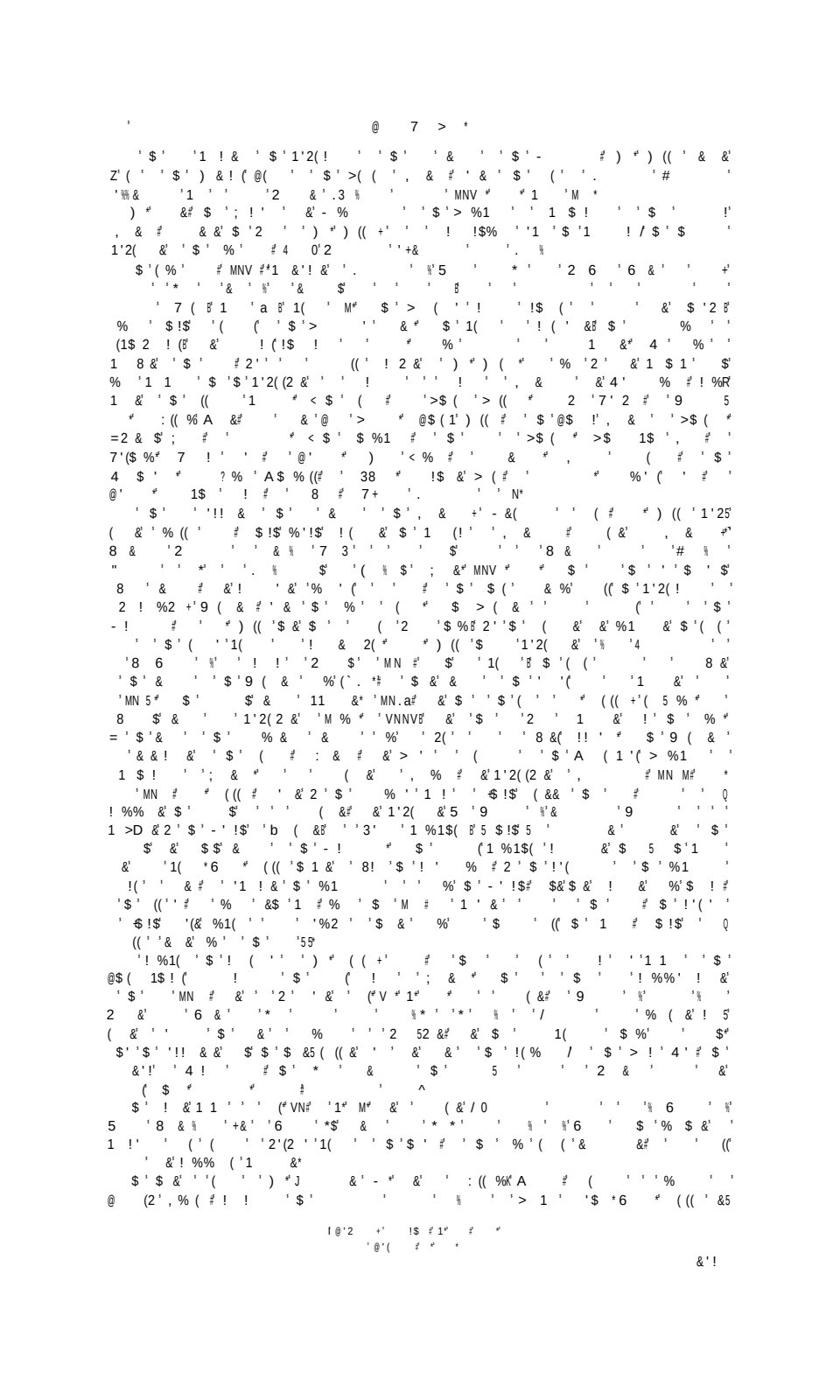
A large Scarlet-flowering Horſe Cheſtnut (Æſculus Pavia) is mentioned as growing in the Biſhop of London's Garden at Fulham, which was then of many years ſtanding. At that time the Biſhop's garden was remarkable for many other fine exotic trees.











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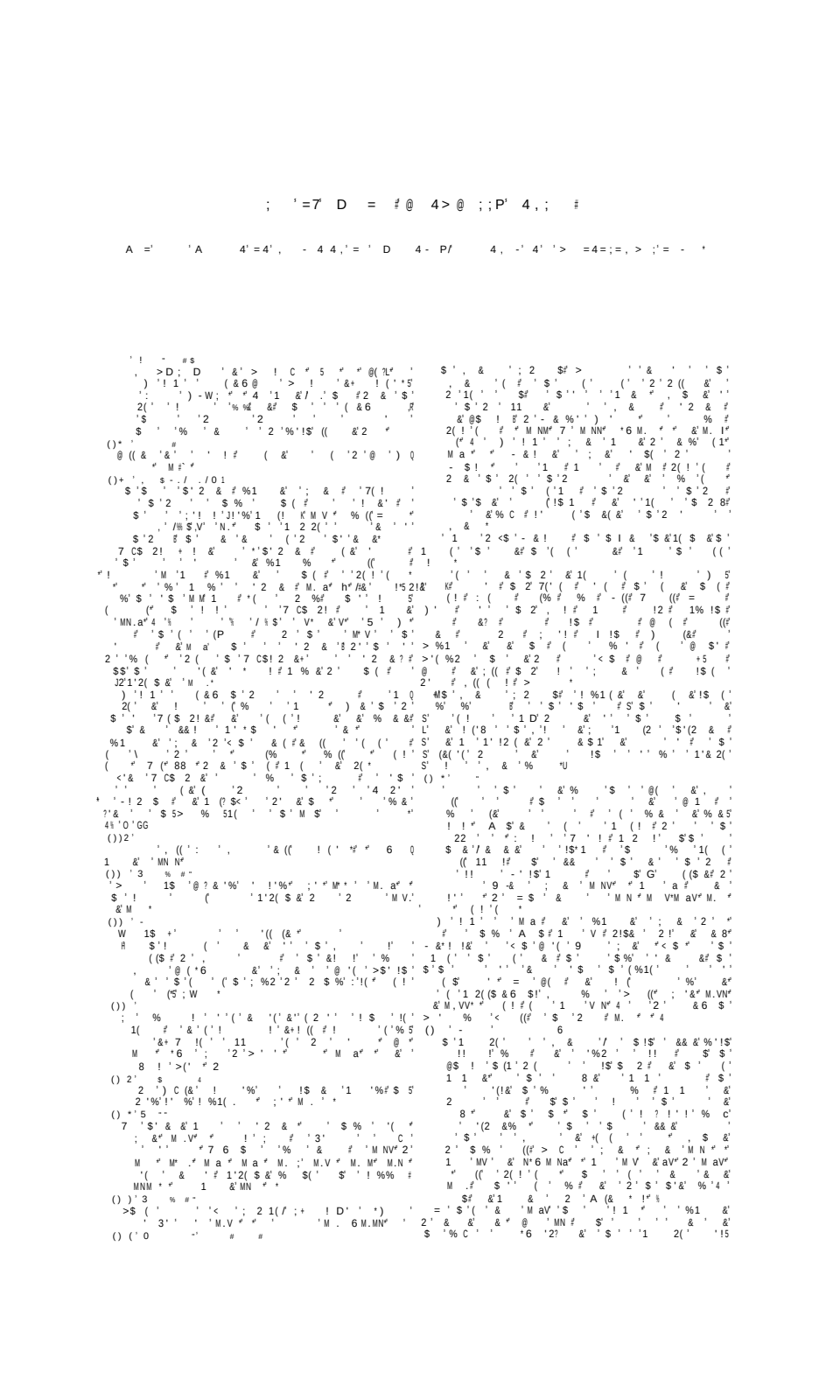

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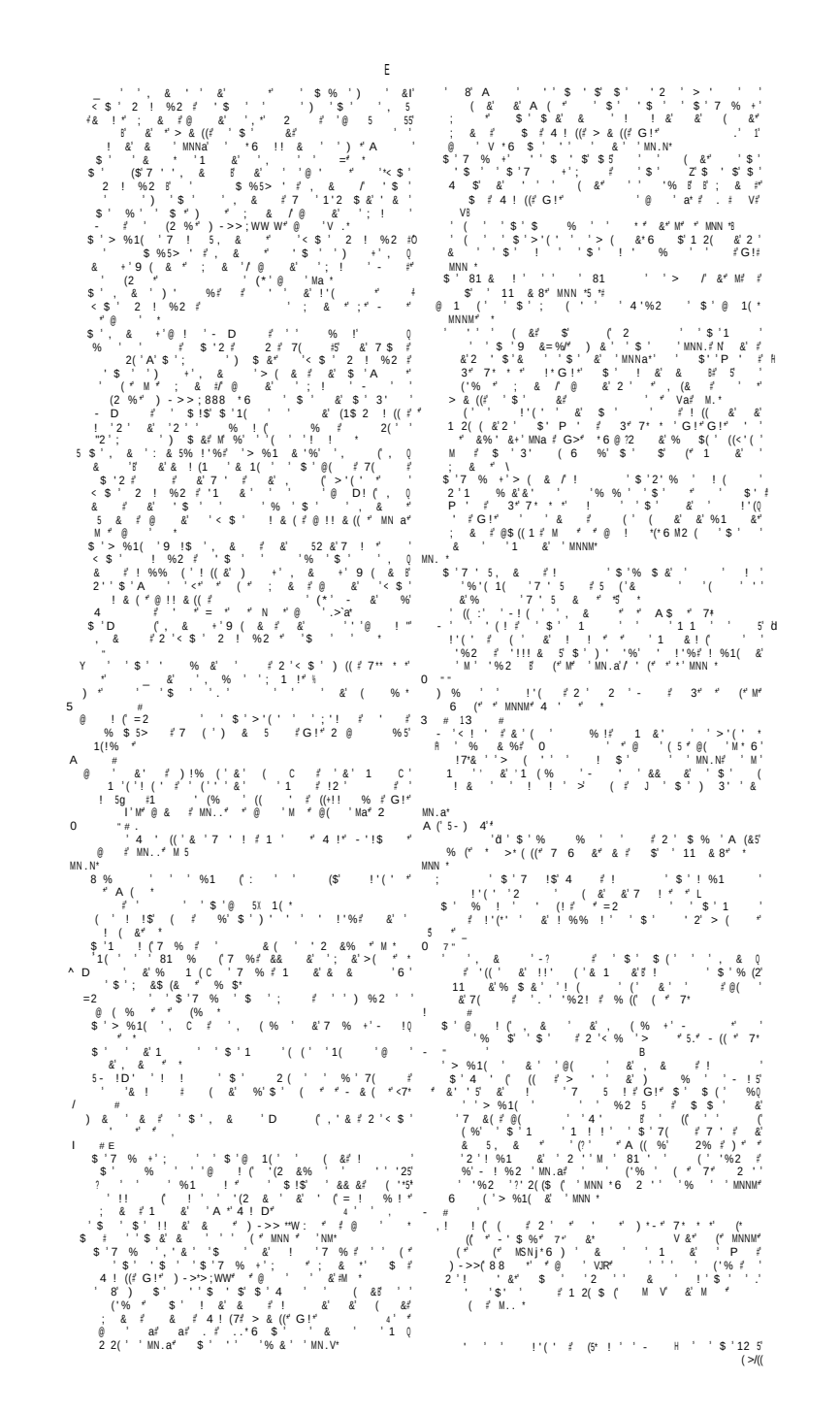

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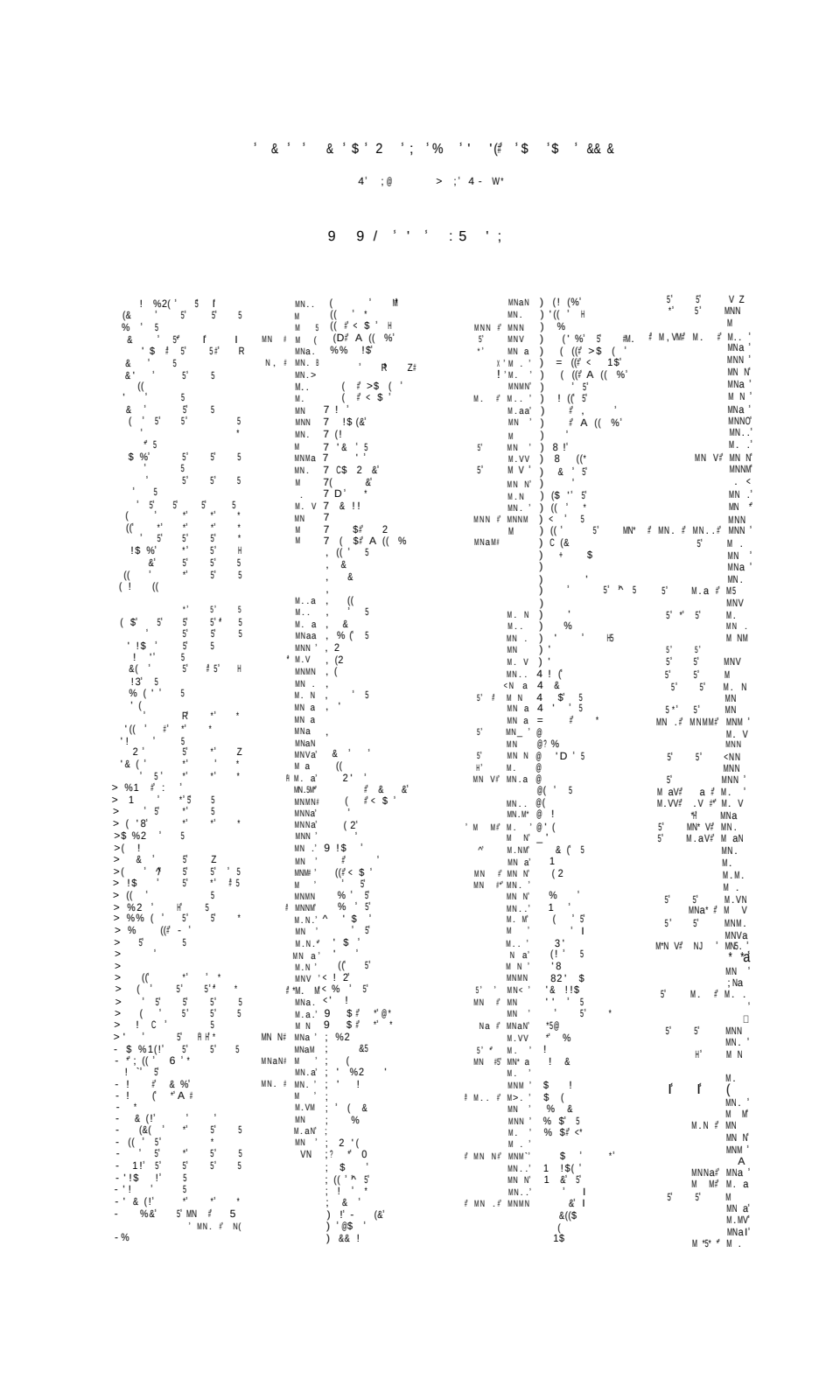

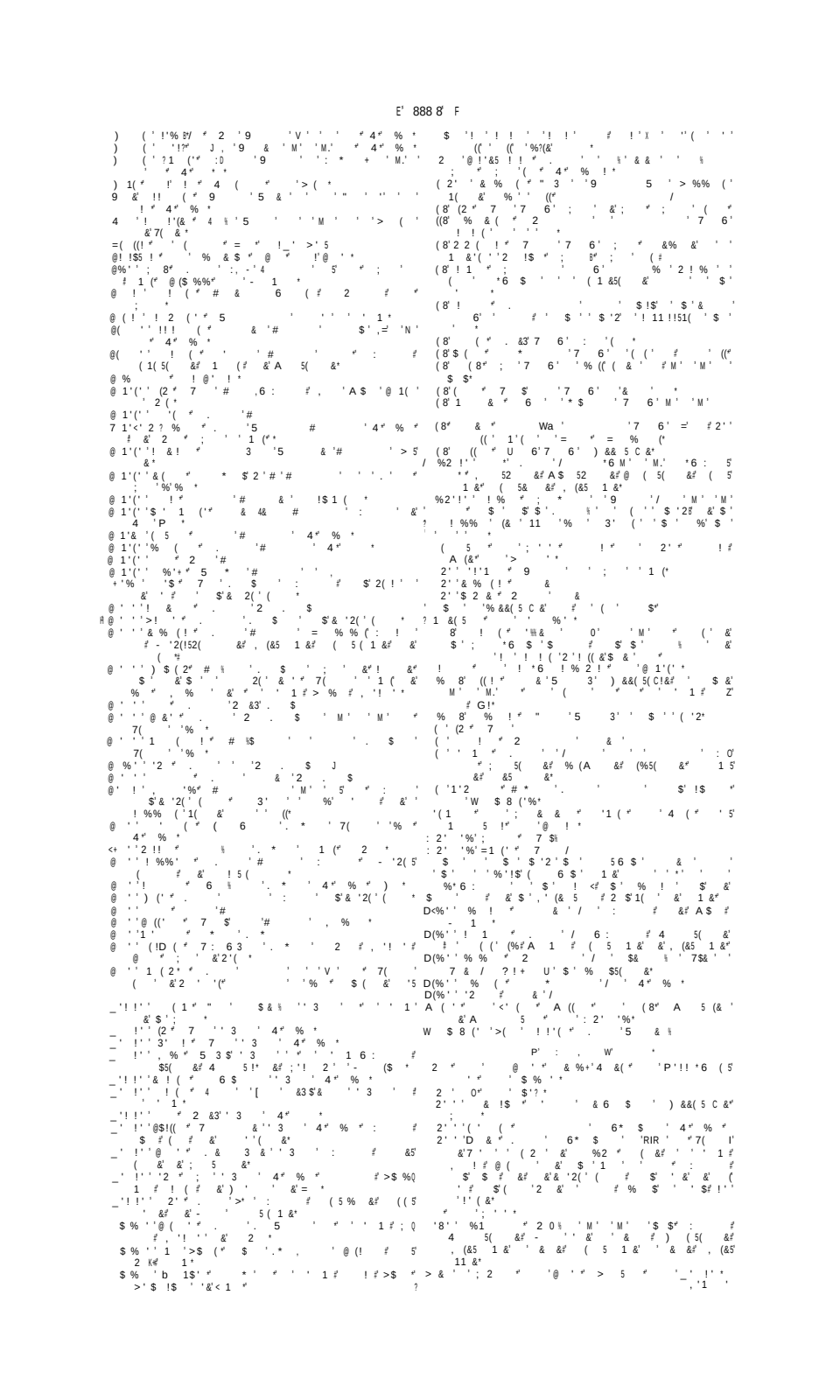

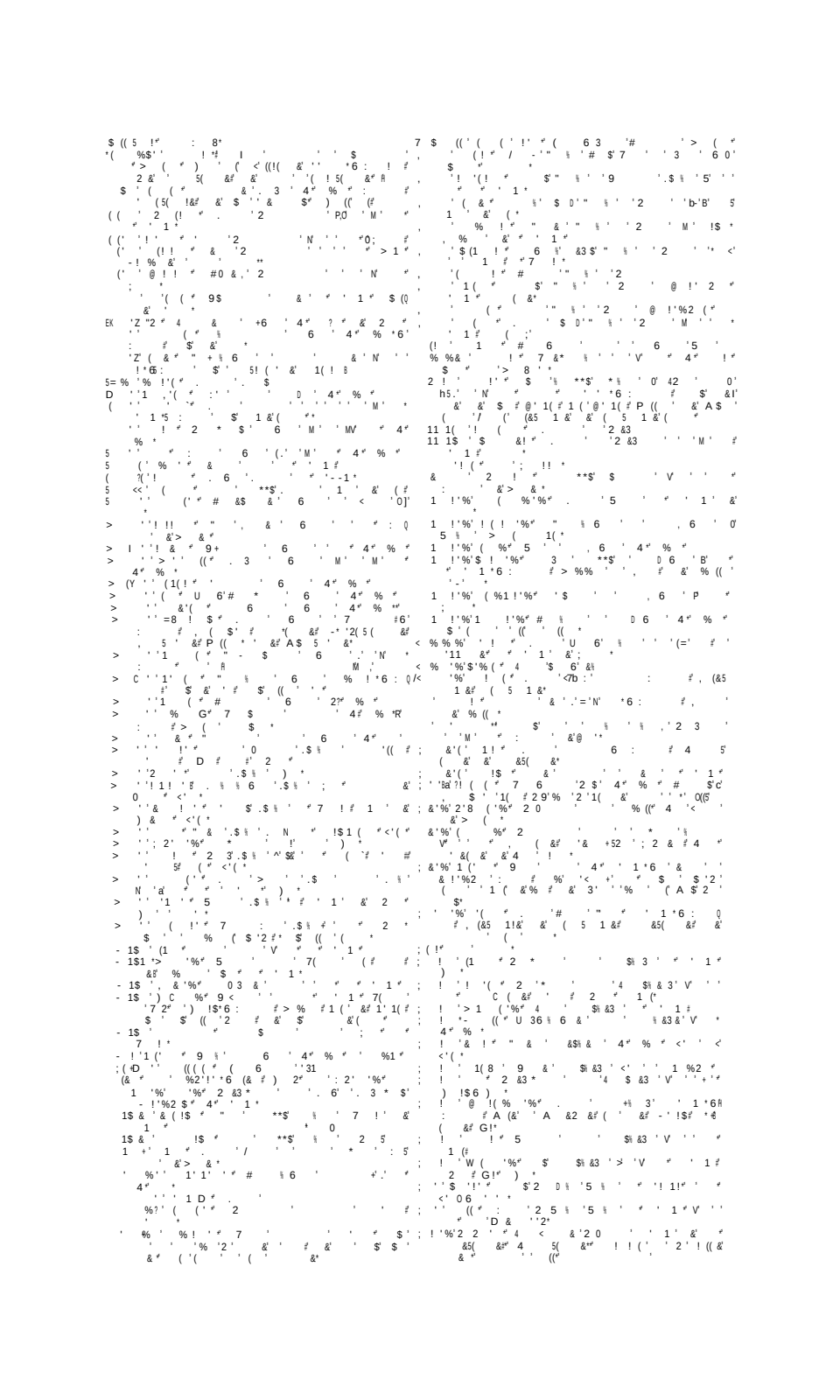

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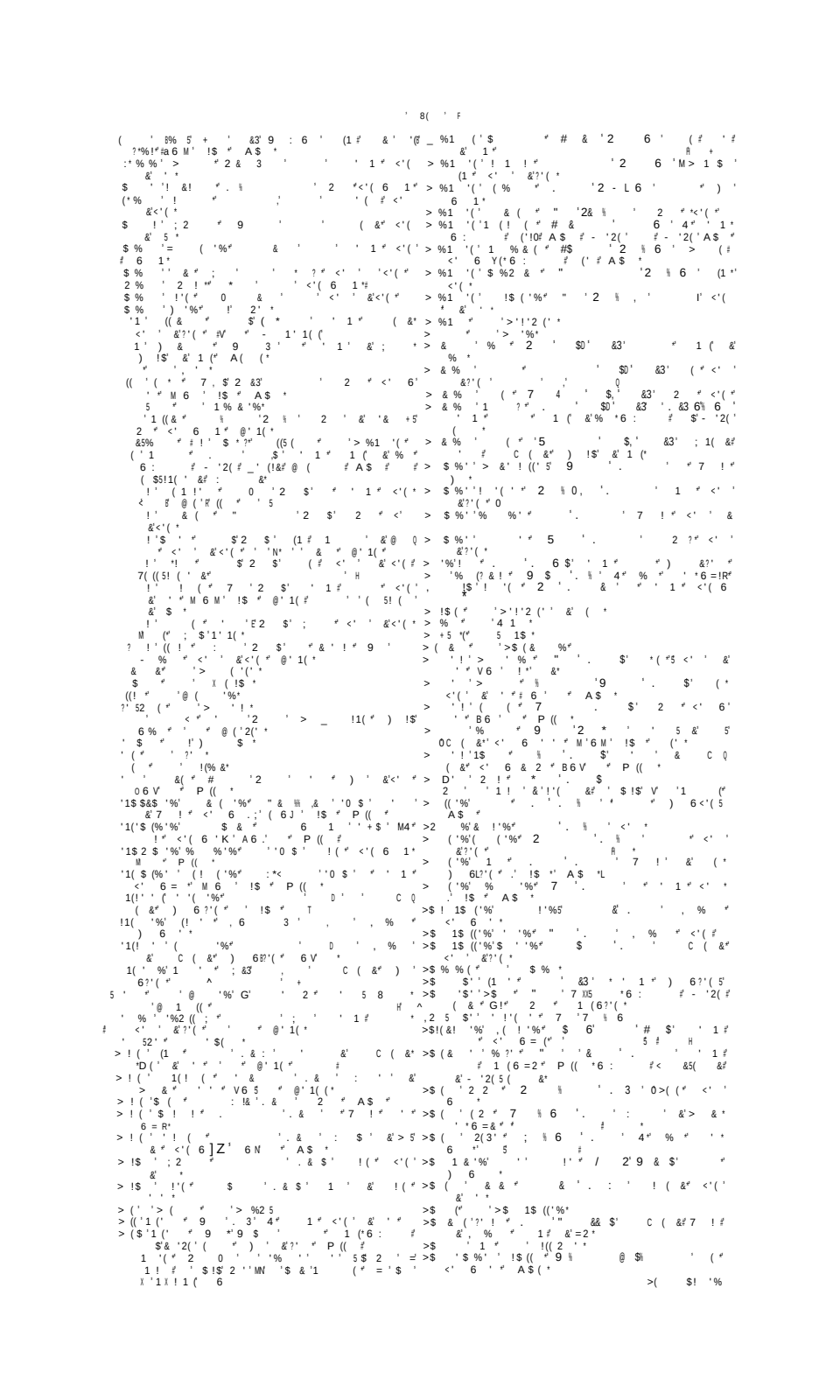

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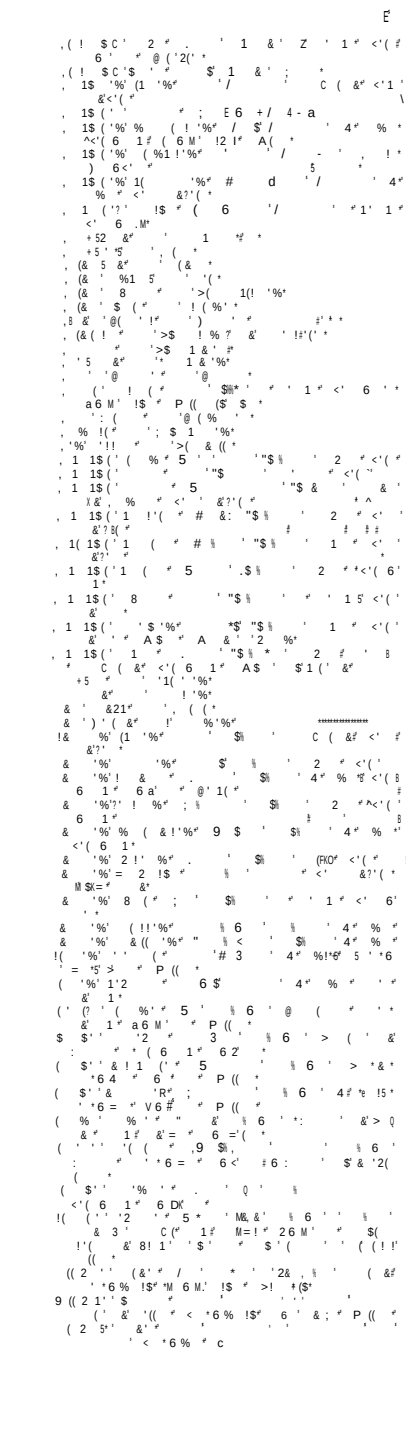

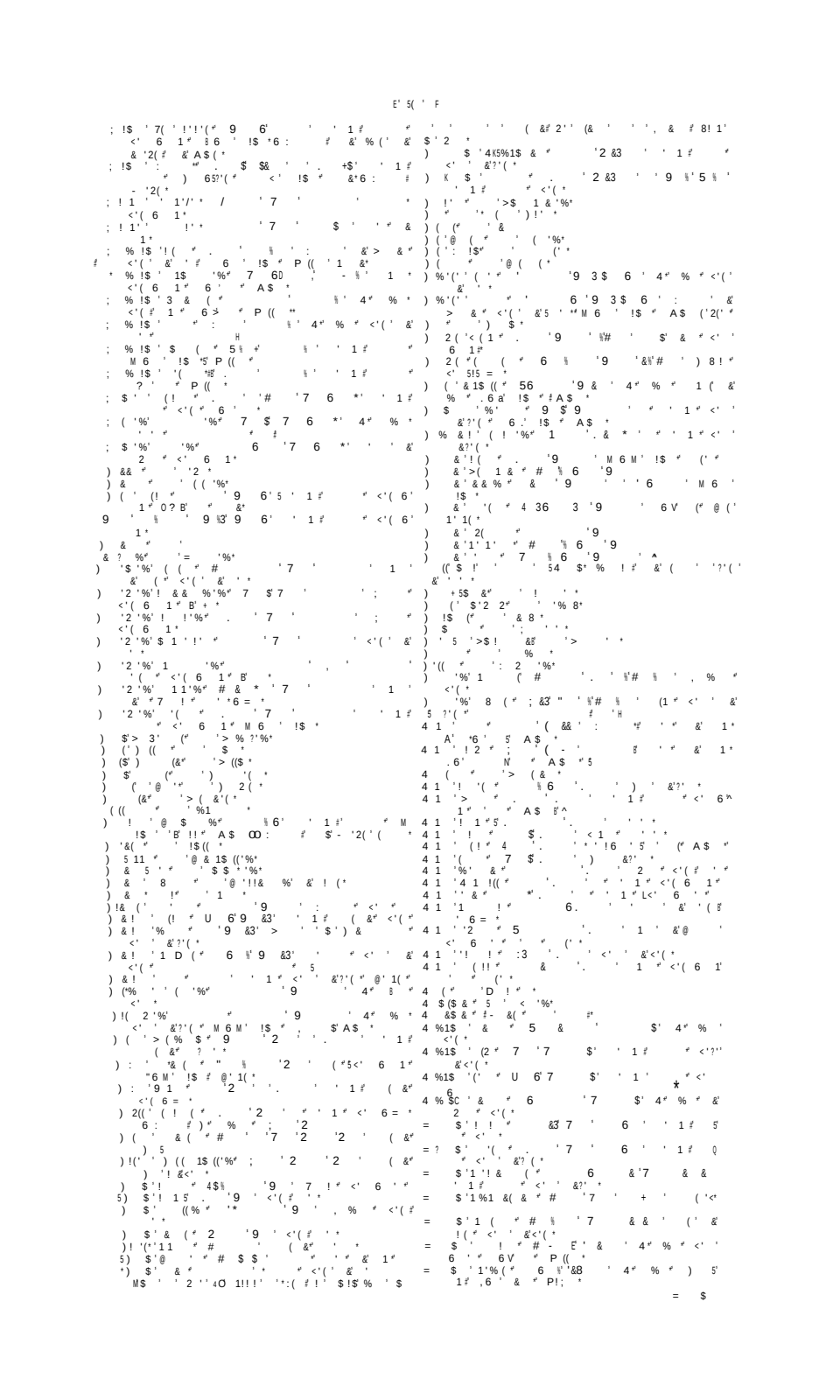

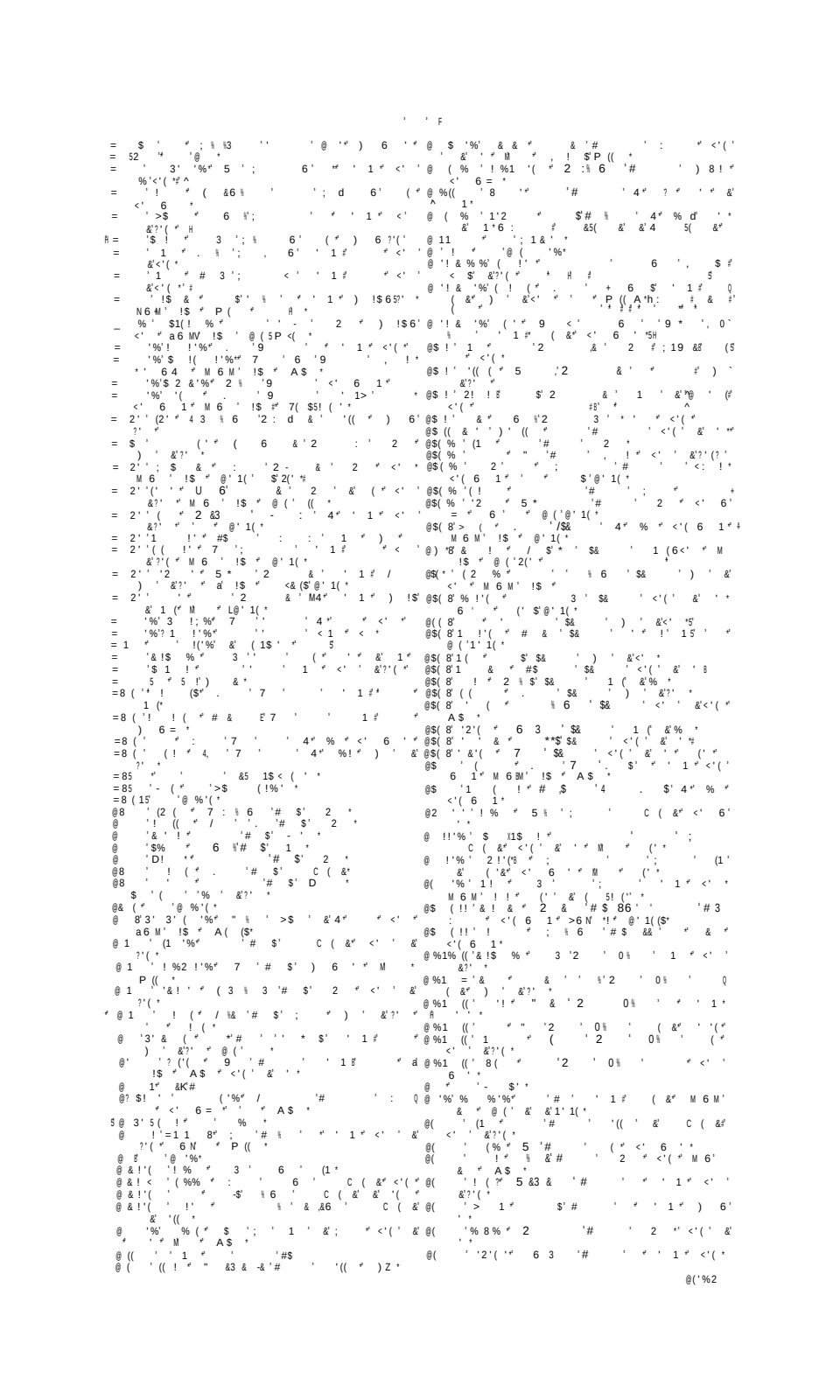

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Stratiotes Aloides. *Water Aloe* or *Frefh-water Soldier*. Europe. England. June.
Succory. See Cichorium.
Sulphur-wort. See Peucedanum
Sun-flower. See Helianthus.
Swallow-wort. See Afclepias.
Sweet Flag. See Acorus.
Sweet William. See Dianthus.
Swertia perennis. *Marfh Swertia*. Switzerland, England. July. 9—14 inches. Dark blue.
Symphytum afperrimum. *Rough Comfrey*. Siberia. June.
Symphytum officinale. *Common Comfrey*. Europe, Britain. 2 feet. Yellowifh White or Purple.
Symphytum orientale. *Oriental Comfrey*. Conftantinople. July.
Symphytum tuberofum. *Tuberous-rooted Comfrey*. Germany, France, Spain, Scotland. May—Sept. 12—18 inches. Pale yellow.
Syrian Rue. See Peganum.
Tabernæmontana Amfonia. *Alternate-leaved Tabernæmontana*. N. Amer. May and june. 12—18 inches. Bluifh white.
Tabernæmontana angufifolia. *Narrow-leaved Tabernæmontana*. N. Amer. May and june. 12—18 inches. Pale blue.
Tanacetum Balfamita. *Coftmary*. S. France and Italy. Aug. and Sept. 3 feet. Yellow.
Tanacetum vulgare. *Common Tanfy*. Europe, Britain. Auguft. 3 feet. Yellow.—Variety, with curled leaves.
Tarragon. See Artemifia.
Telephium Imperati. *True Orpine*. S. France and Italy. June—Aug. 6—9 inches. White.
Teucrium canadenfe. *Nettle-leaved Germander*. N. Amer. Aug. and Sept. 12—18 inches. Yellow.
Teucrium Chamædrys. *Creeping* or *common Germander*. Europe, England. June and july. 9 inches. Purpliih.
Teucrium hircanicum. *Hairy* or *Betony-leaved Germander*. Perfia. June—Sept. 12—18 inches. Purple.
Teucrium lucidum. *Shining Germander*. S. Europe. June—Sept. 1 foot. Purple.
Teucrium montanum. *Mountain* or *Dwarf Germander*. France, Switzerland, Germany. June—Sept. 6—8 inches. White.
Teucrium multiflorum. *Many-flowered Germander*. Spain. June—Sept.
Teucrium pyrenaicum. *Pyrenean Germander*. June—Aug. 4 or five inches. Purple with white.
Teucrium Scordium. *Water Germander*. Europe, England. July and Aug. 9 inches. Red.
Teucrium Scorodonia. *Wood Sage*. Europe, Britain. 12—18 inches. Whitifh.
Thalictrum alpinum. *Alpine Meadow Rue*. N. Europe, Britain. May—july. 5 or 6 inches. Deep Red.
Thalictrum angufifolium. *Narrow-leaved Meadow Rue*. Germany. June and july. 2—3 feet. Whitifh.
Thalictrum aquilegifolium. *Columbine-leaved Meadow Rue*, or *Feathered Columbine*. Switzerland and Auftria. May—july. 3 feet. White.
Thalictrum atropurpureum. *Dark-flowered Meadow Rue*. Germany. June and july.
Thalictrum contortum. *Twifted-leaved Meadow Rue*. Germany. June and july.
Thalictrum Cornuti. *Canadian* or *trifid-leaved Meadow Rue*. N. Amer. May—july. 2—3 feet. White.
Thalictrum dioicum. *Dioecious Meadow Rue*. N. Amer. June and july. 9—12 inches. Yellowifh white.
Thalictrum elatum. *Tall Meadow Rue*. Hungary. May—july.
Thalictrum flavum. *Yellow-rooted Meadow Rue*. Europe, Britain. 3—4 feet. Whitifh.
Thalictrum foetidum. *Stinking Meadow Rue*. France and Switzerland. May—july. 6—8 inches. White.
Thalictrum lucidum. *Shining Meadow Rue*. S. Europe. May—july. 3—5 feet. Yellowifh White.
Thalictrum majus. *Great Meadow Rue*. Europe, Britain. May—july.
Thalictrum medium. *Middle Meadow Rue*. Germany. May—july.
Thalictrum minus. *Small Meadow Rue*. Europe, Britain. May—july. 9—12 inches. Yellowifh White.
Thalictrum nigricans. *Black Meadow Rue*. Auftria. June and july.
Thalictrum purpurafcens. *Purple-ftalked Meadow Rue*. Canada. June and july. 2—3 feet.
Thalictrum rugofum. *Wrinkle-leaved Meadow Rue*. N. Amer. June and july.
Thalictrum fibiricum. *Siberian Meadow Rue*. June and july.
Thalictrum fimplex. *Simple-ftalked Meadow Rue*. Sweden. May—july.
Thalictrum fpeciofum. *Glaucous-leaved Meadow Rue*. Spain. June and july.
Thalictrum tuberofum. *Tuberous-rooted Meadow Rue*. Spain. June. 18—24 inches. White.
Thapfia garganica. *Garganian Deadly Carrot*. Spain. June and july.
Thapfia villofa. *Villous Deadly Carrot*. S. Europe. June and july. 2—3 feet. Yellow.

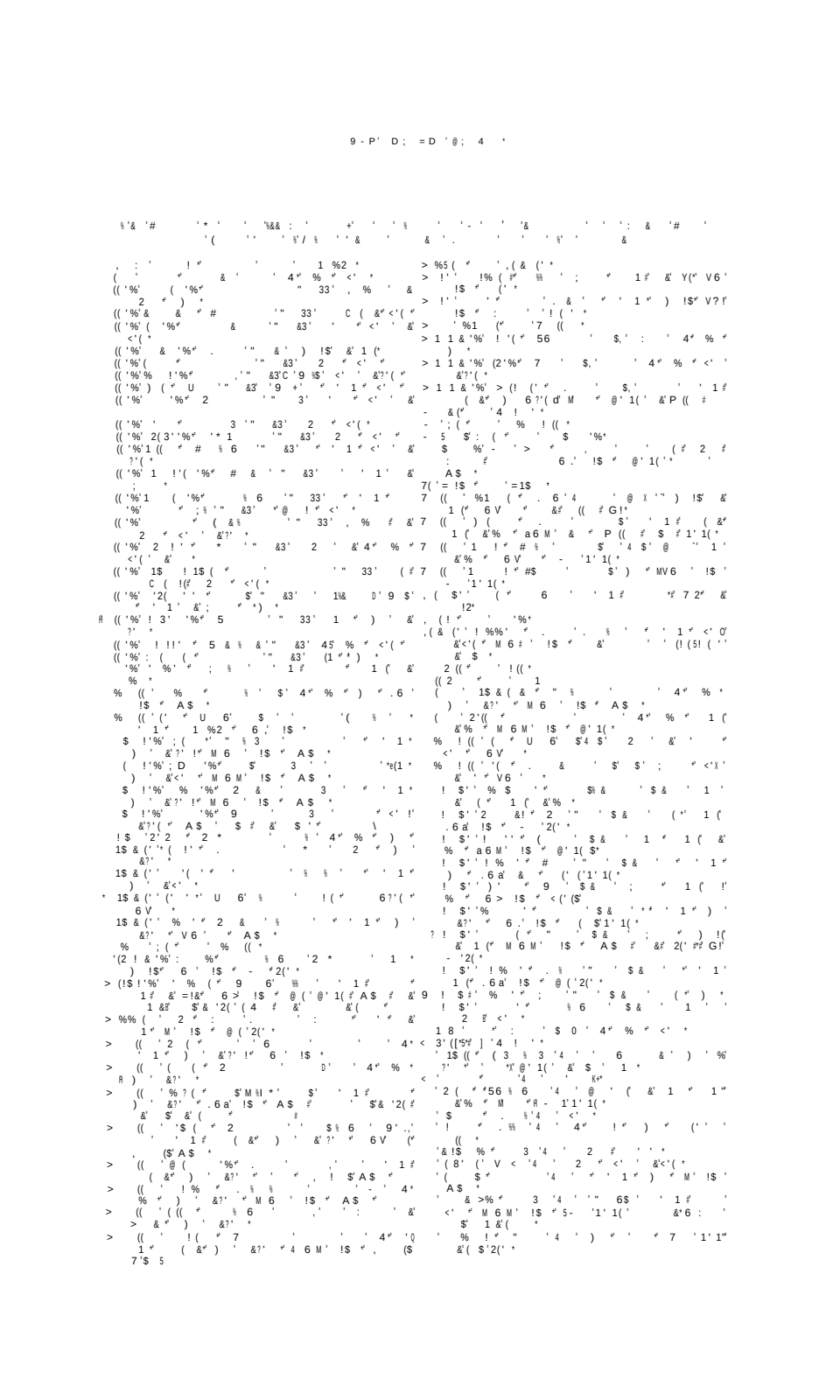
Thrift. See Statice.
Thymus alpinus. *Alpine Thyme*. Auftria and Switzerland. June—Sept.
Thymus melifloides. *Balm-leaved Thyme*. Hungary. June—Aug.
Thymus montanus. *Mountain Thyme*. Hungary. June—Aug.
Thymus virginicus. *Virginian* or *Savory Thyme*. N. Amer. july.
Tiarella cordifolia. *Heart-leaved Tiarella*. N. Amer. April and may. 5—6 inches. White.
Tickfeed Sunflower. See Coreopfis.
Toadflax. See Antirrhinum.
Toothwort. See Dentaria.
Tormentilla erecta. *Upright Tormentil* or *Septfoil*. Europe, Britain. May—Oct. 1 foot. Yellow.
Tormentilla reptans. *Creeping Tormentil*. Europe, Britain. May—Oct. 5 or 6 inches. Yellow.
Toothwort. See Dentaria.
Tragopogon Dalechampii. *Perennial* or *Great-flowered Goat's-beard*. S. Europe. June—Oct.
Trefoil. See Trifolium.
Trientalis europæa. *Common Trientalis*, or *Chickweed Winter-green*. Europe, Britain. 5 or 6 inches. White.
Trifolium alpeftre. *Oval-fpiked Trefoil*. Europe. June and july.
Trifolium alpinum. *Alpine Trefoil*. Italy, Switzerland. Pyrenees. June—Aug.
Trifolium Lupinaffer. *Baftard Lupine*. Siberia. June—Aug.
Trifolium macrorhizum. *Long-rooted Trefoil*. Hungary. July.
Trifolium montanum. *Mountain Trefoil*. Europe. July.
Trifolium olympicum. *Olympian Trefoil*. Greece. June.
Trifolium pannonicum. *Hungarian Trefoil*. June and july.
Trifolium reflexum. *Reflexed Trefoil*. Virginia. May—Sept.
Trifolium rubens. *Long-fpiked Trefoil*. S. Europe. June—Sept.

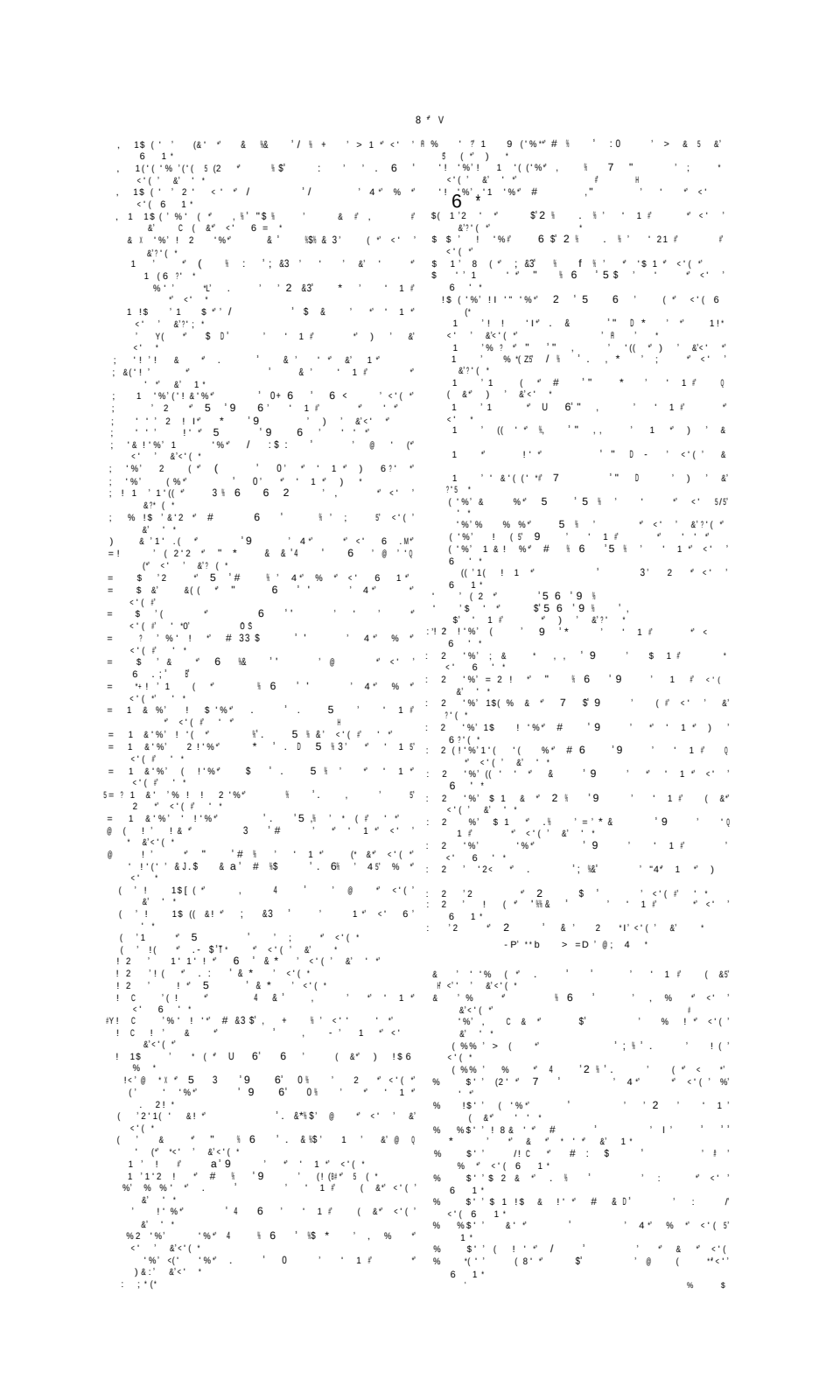
Many fpecies are annual, and others fo common in a wild ftate as not to be cultivated in gardens.

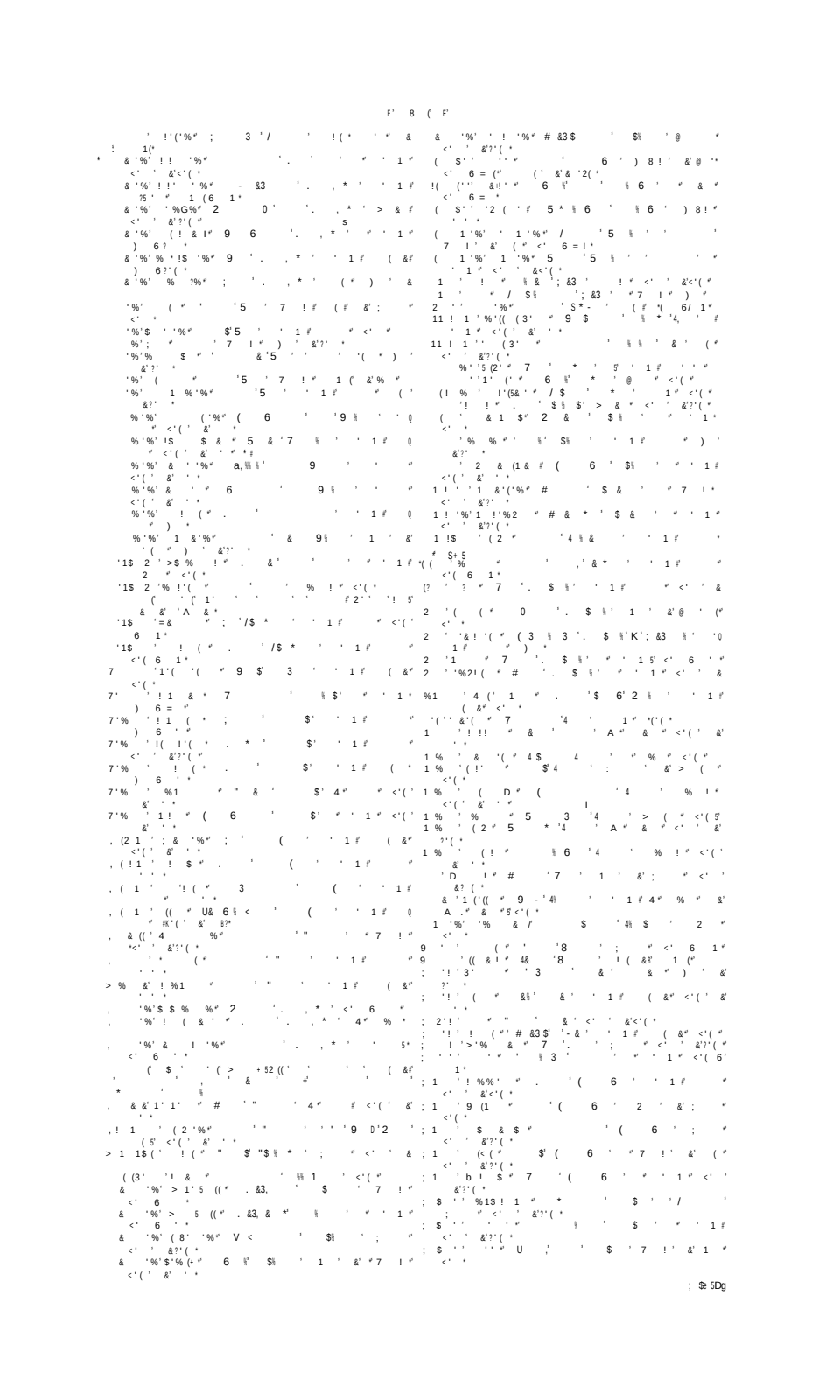
Trioftcum perfoliatum. *Fever-root*. N. Amer. June and july. 1 foot. Dark red.
Triplacum daftyloides. *Rough-feeded Triplacum*. Virginia. Auguft.
Trollius afiaticus. *Afiatic Globe-flower*. Siberia. June. 12—18 inches. Orange and gold.
Trollius europæus. *European Globe-flower*. Europe, Britain. May and june. 12—18 inches. Yellow.
True-love. See Paris.
Tuffilago alba. *White Colt's-foot* or *Butter-bur*. Europe. Jan.—april. 6—9 inches.
Tuffilago alpina. *Alpine Colt's-foot*. Switzerland, Auftria, Siberia. May. 4—5 inches. Purpliih.
Tuffilago Farfara. *Common Colt's-foot*. Europe, Britain. March and april.
Tuffilago hybrida. *Long-ftalked Colt's-foot* or *Butter-bur*. Europe, Britain. March and april. 12—18 inches. Reddiih.
Tuffilago lobata. *Lobed-leaved Colt's-foot* or *Butter-bur*. Switzerland. March and april.
Tuffilago palmata. *Palmated Colt's-foot*. Newfoundland and Labrador. April.
Tuffilago paradoxa. *Downy-leaved Colt's-foot*. Switzerland. April.
Tuffilago Petafites. *Great Colt's-foot* or *Butter-bur*. Europe, Britain. March and april.
Typha angufifolia. *Narrow-leaved Cat's-tail*.
Typha latifolia. *Great Cat's-tail*. Both natives of Europe and Britain. July.
Valantia. See Galium.
Valeriana celtica. *Celtic Valerian*. Switzerland. June and july.
Valeriana dioica. *Marfh Valerian*. Europe, Britain. May—july. 9—12 inches. Flefh-coloured.
Valeriana montana. *Mountain Valerian*. Auftria and Switzerland. April—june.
Valeriana officinalis. *Officinal* or *great wild Valerian*. Europe, Britain. June—Sept. 2—3 feet. Flefh-coloured.
Valeriana Phu. *Garden Valerian*. Germany. May—july. 2—3 feet. White.
Valeriana pyrenaica. *Pyrenean Valerian*. May and june. 2—3 feet. Flefh-coloured.
Valeriana rubra. *Red Valerian*. France, Italy, Britain. May—july. 1—3 feet. Red varying to White.
Valeriana ruthenica. *Ruffian Valerian*. Siberia. July and Aug.
Valeriana tripteris. *Three-leaved Valerian*. Switzerland. March—may. 6 inches. Flefh-coloured.
Valeriana tuberofa. *Tuberous Valerian*. S. Europe. April and may.
Veratrum album. *White Hellebore*. Europe. June—Aug. 5—6 feet. Greenifh.
Veratrum luteum. *Yellow-flowered Veratrum*. N. Amer. July and Aug. 1 foot. Yellow.
Veratrum nigrum. *Dark-flowered Veratrum*. Auftria and Siberia. June and july. 3—4 feet. Dark Purple.
Veratrum viride. *Green-flowered Veratrum*. N. Amer. July and Aug.

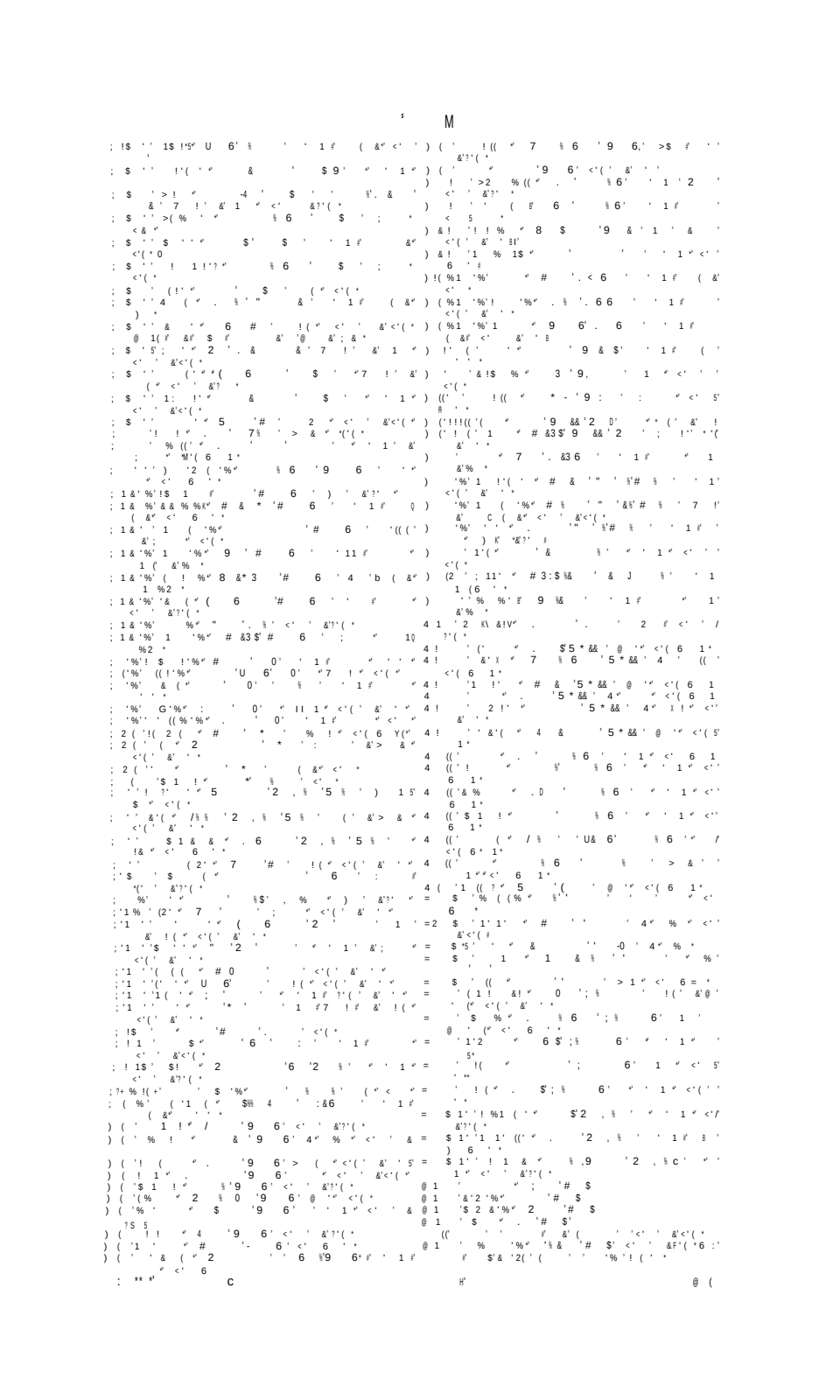


Verbafcum









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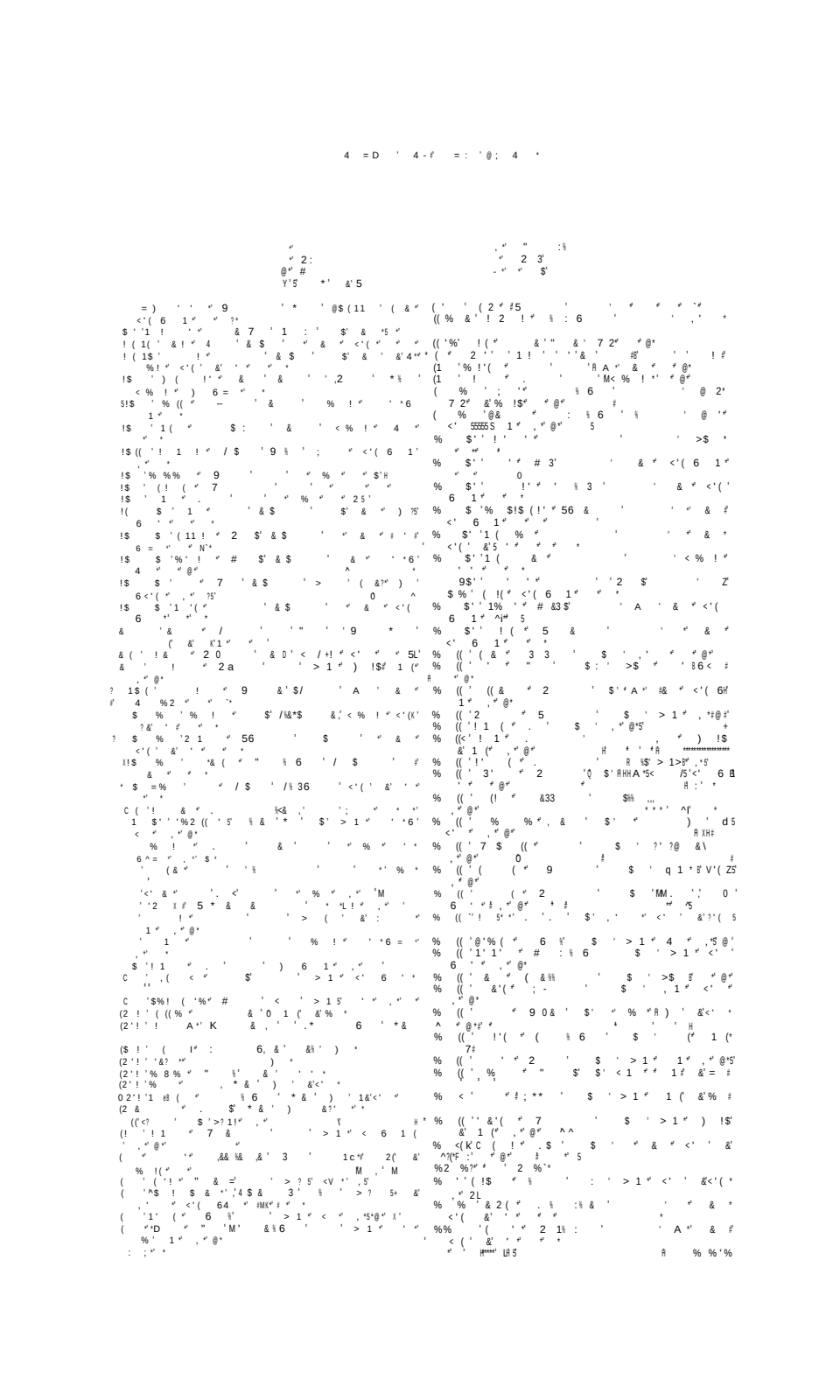

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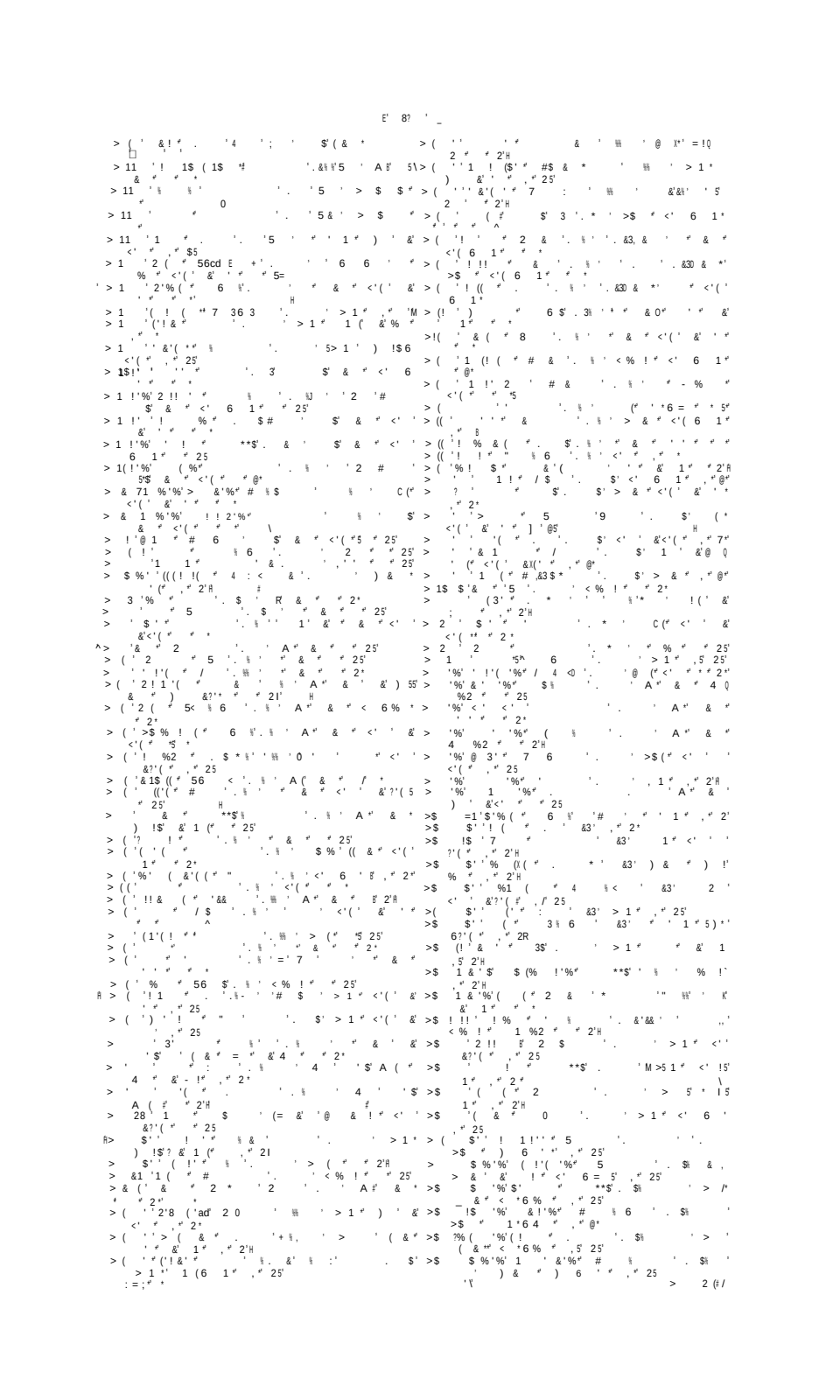

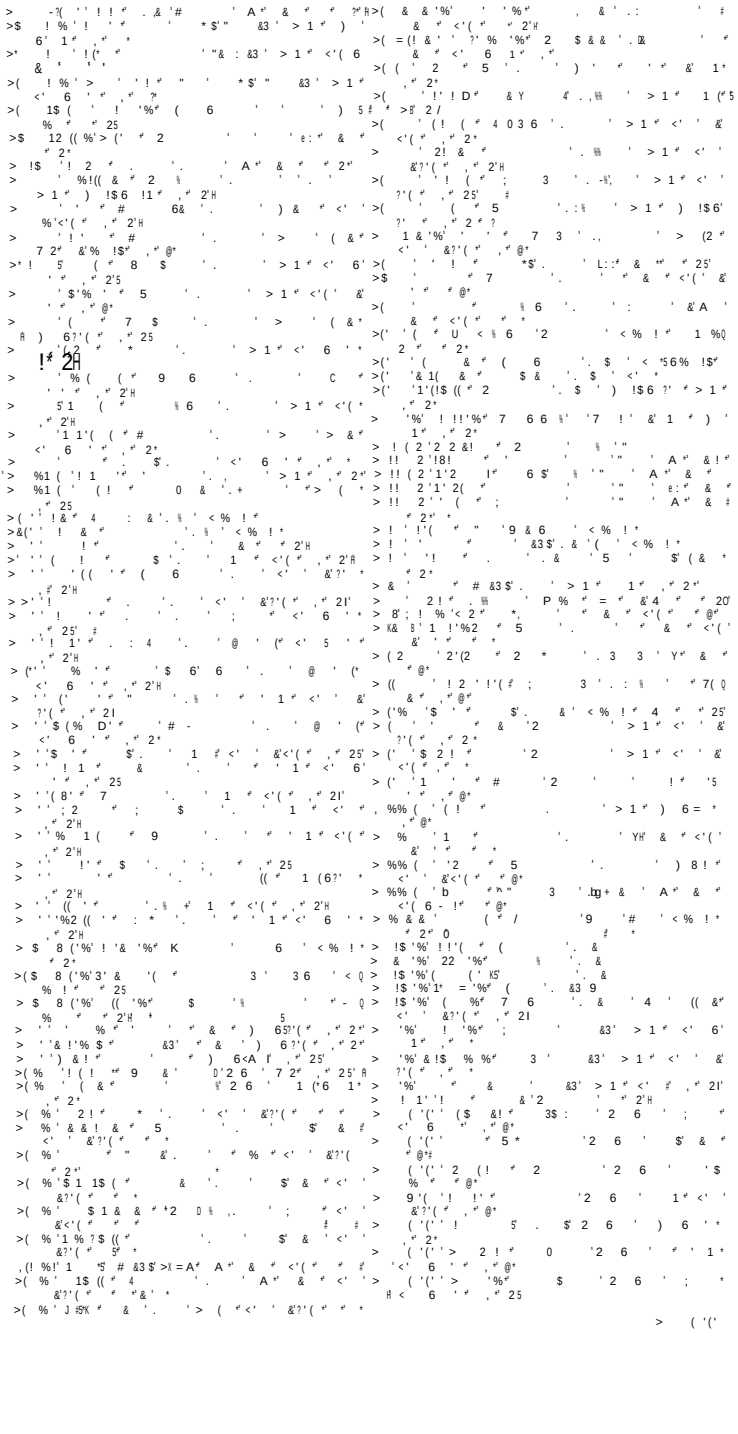

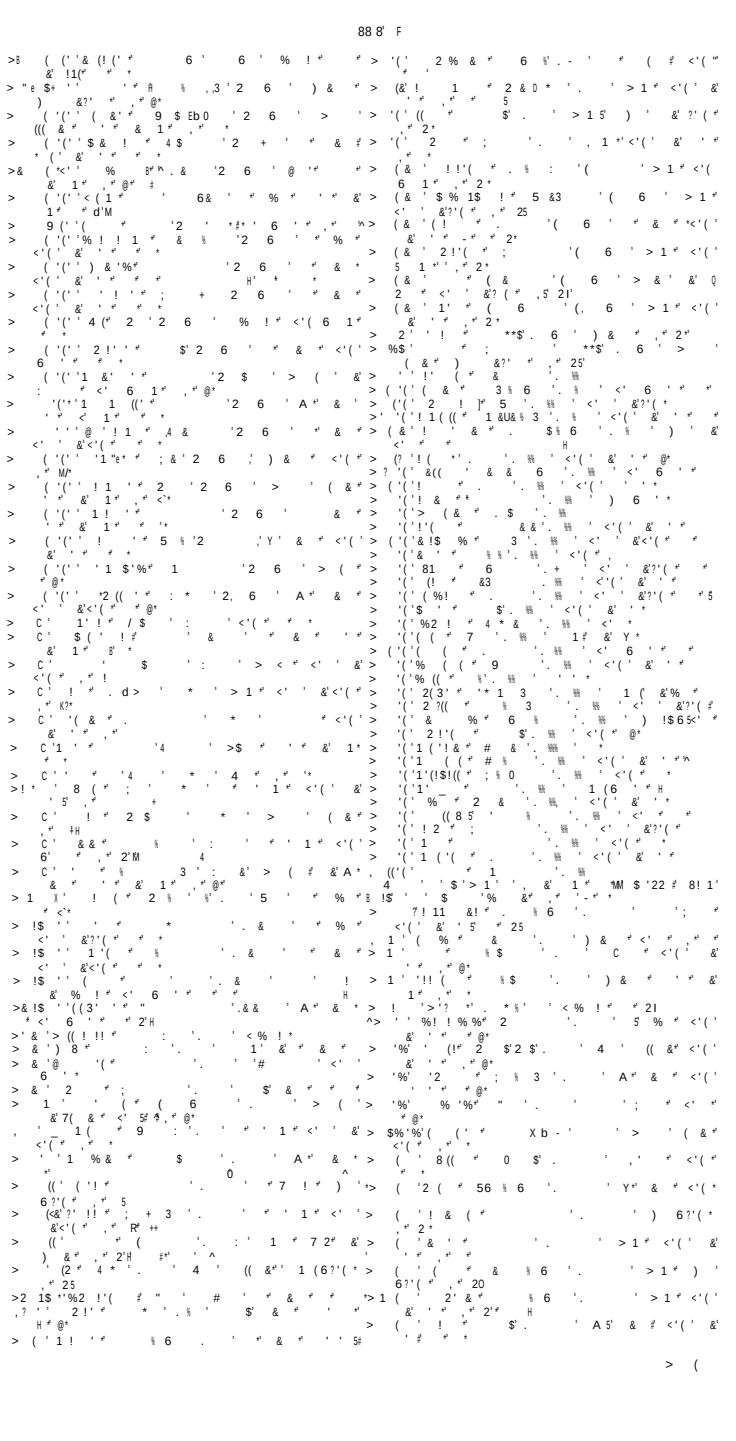

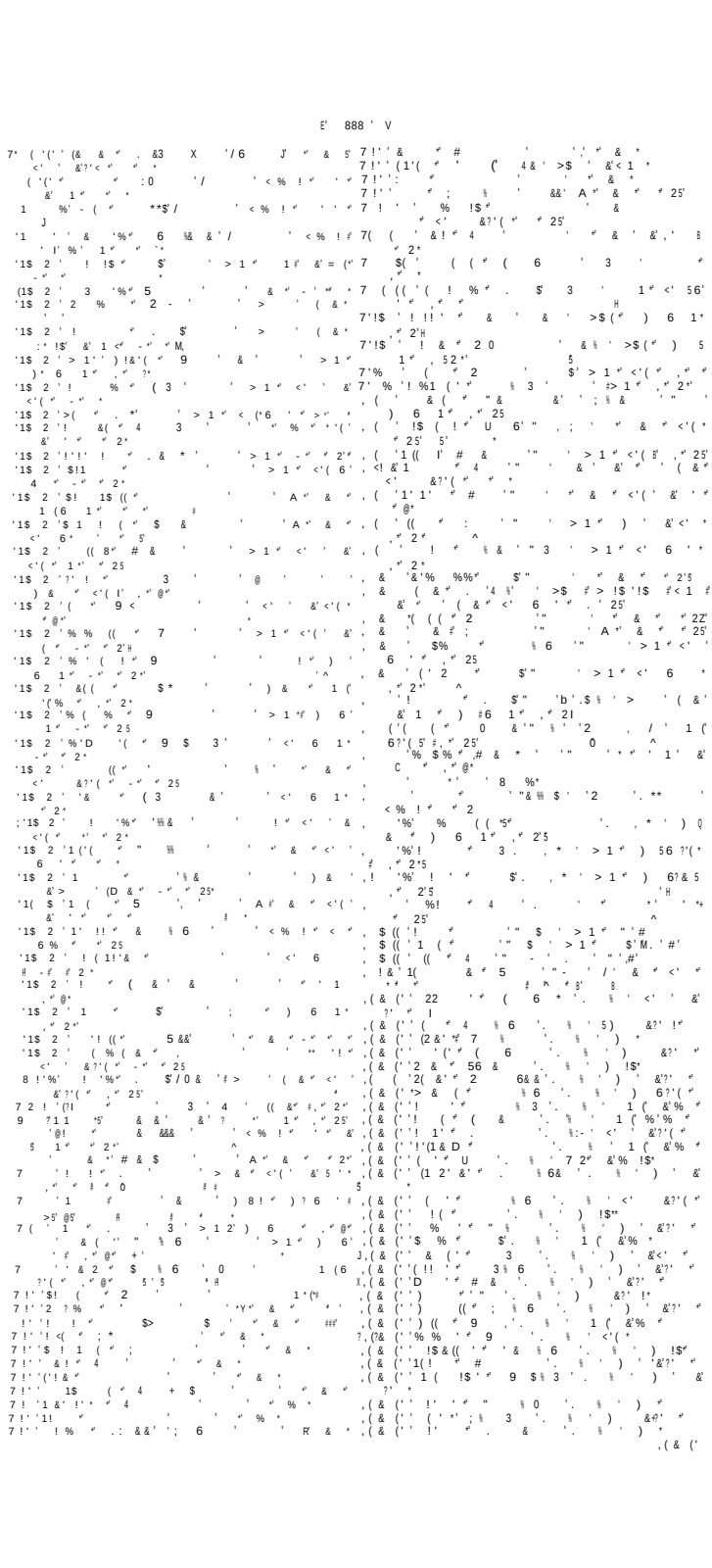

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) ( ' 1 ! ‘'  3 '9  6'<  ! '  1 ‘ ⅛  &'= ‘'  ‘'  ‘'  ) % '! ! ( ‘'  '9 ⅛ ' A ‘'  & ‘'  ‘ 2 ‘'
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)  ' & ! '  4  '9  '  ‘'  & ‘'  <'  5  ) % ( ' &  & ‘ 56 &  '  9 ⅛ ' 4 '  (( &‘
1 ‘'  ‘' 2 ‘'  H  ) !$ 6 % ‘'  , ‘' 25
L)  '(! '  ‘'  $' 9  ' , ‘'  *  ) % '  ( ‘'  6  '  9 ⅛ ' 4 '  (( &‘
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' ‘' 2 ‘'  0  ) % '  ‘'  ‘'  6  ' ‘'  ‘'  A ‘'
' ‘ ' & ! ‘'  4  '  6  ' ‘'  % ‘'  ' ‘ ‘  ‘'  @‘'  0  0  ) % '  ( ‘'  ‘'  6  ' ‘'  ‘ 25
' (  ! ‘'  7  '  6  ' A ‘'  & ‘'  ‘' @‘'  ) % '  ( ‘'  ‘'  6  '9 ⅛ ' ‘'  &  ‘'  ‘
‘2 '%'  ! 2'( '%‘'  &  ' 7  '9  <'( ‘'  ‘ 25'
> & ‘' *( % 6 ' ‘'  , ‘' @*  ) % '  & ( ‘'  '' ⅛ 6 '9 ⅛ ' ‘'  *  &  ‘'  ‘
‘2 '%'  ( !  ' ‘'  ⅛ & ' 7  ' 4*  ' > 1 ‘'  6  1 ‘'  ‘' 2'H
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> & ‘' <'  ' ‘ ‘' ‘ , ‘' 25'  , ‘' 2'H
)  ' (  (! ‘'  ⅛ 6 ' 9 $  ' > 1 ‘' <'( ' )  ' (  (3' ‘' 2  '9 ⅛ ' A ‘'  & ‘'  ‘'
&' ‘ ‘'  , ‘'  *  &'<'( ‘'  ‘' 2*
)  '@ 2 & ‘' ,  $' 9 $ '  ! ‘'  ) 6 ' ) % '  ( ‘'  3  ' 9 ⅛ ' 4 '  (( &‘
1 ‘'  ‘'  *  ) !$ 6 % ‘'  , ‘' 25
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) 7  '  ( ! ‘'  ⅛ 6  '9  ' 1 %2 ‘' > 1 ‘'  2 ‘'  <'( ‘'  ‘' 2*
, ‘' @*  ) % '1  ‘'  '9 ⅛ ' ‘'  &  ‘'  ‘'
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) ( ( ' ! '  (  ‘'  4  6 '9  &  ) % '  ! &  ‘'  .  * '9 ⅛ ' $' & ‘'  ‘' 25'
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) ( ( ' ! '  &  ‘'  ( 3  ⅛ 6  '9  &  ) % '  1 !  ‘'  2  '  '9 ⅛ ' ‘'  & 5'
) ( ( ' ! ' 3'*  ‘'  ;  ' '9  &  ' ‘'  ‘'  ‘' 2I
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( ( '  ' 1 ! '%‘'  3 '9  ) % '  ‘'  6  '9 ⅛ ' A ‘'  &  ‘' <'( '
) (  $ '%'  3'  '%‘ 5  '  '9  &'  ' ‘'  ⅝ ‘ 2*
) ( ' $ '%'  & ‘'  ‘'  ⅛ 6  '9  ⅝' > 1 ‘' <'  ‘'  ) % '( ! ‘'  ‘'  <  '9 ⅛ ' 4 '  (( &‘
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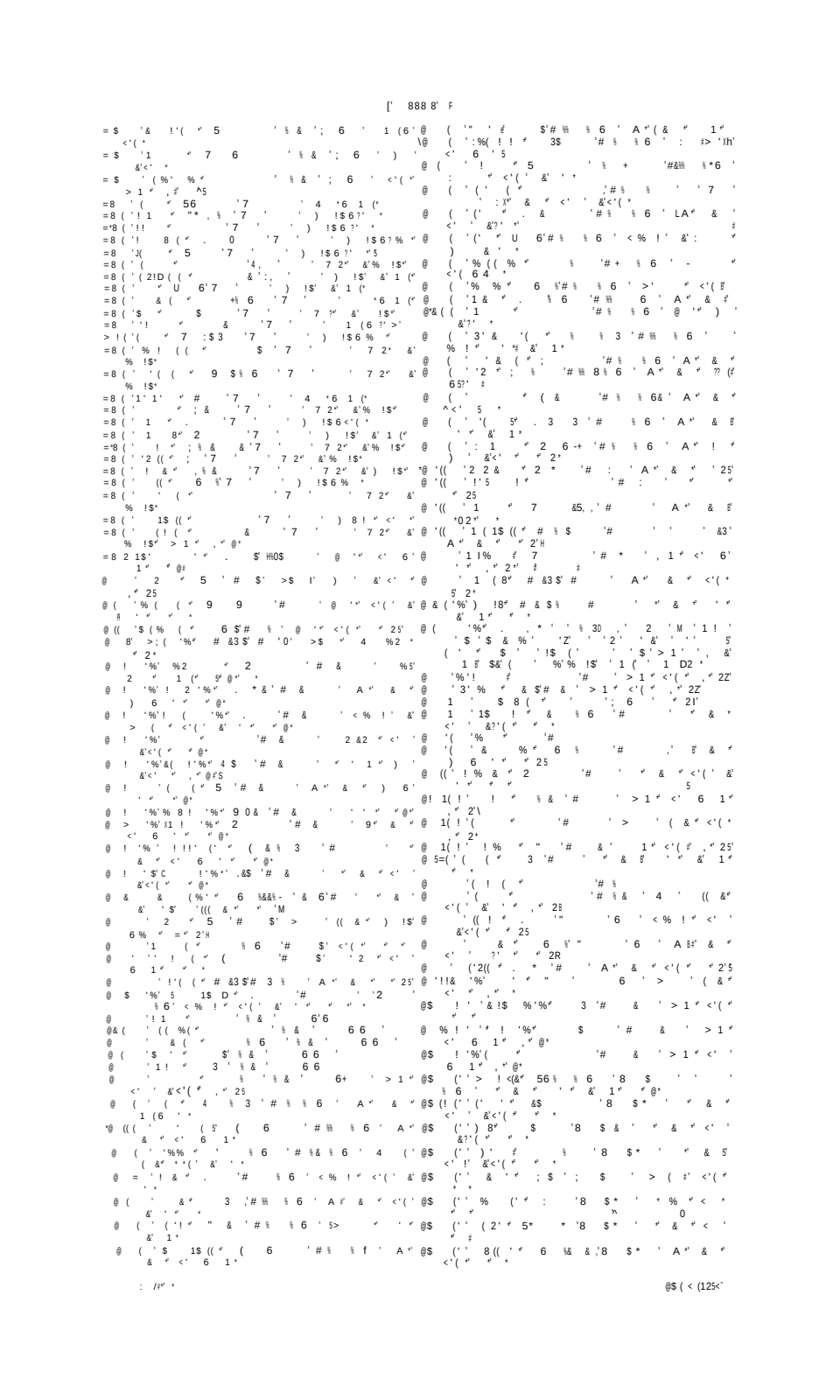

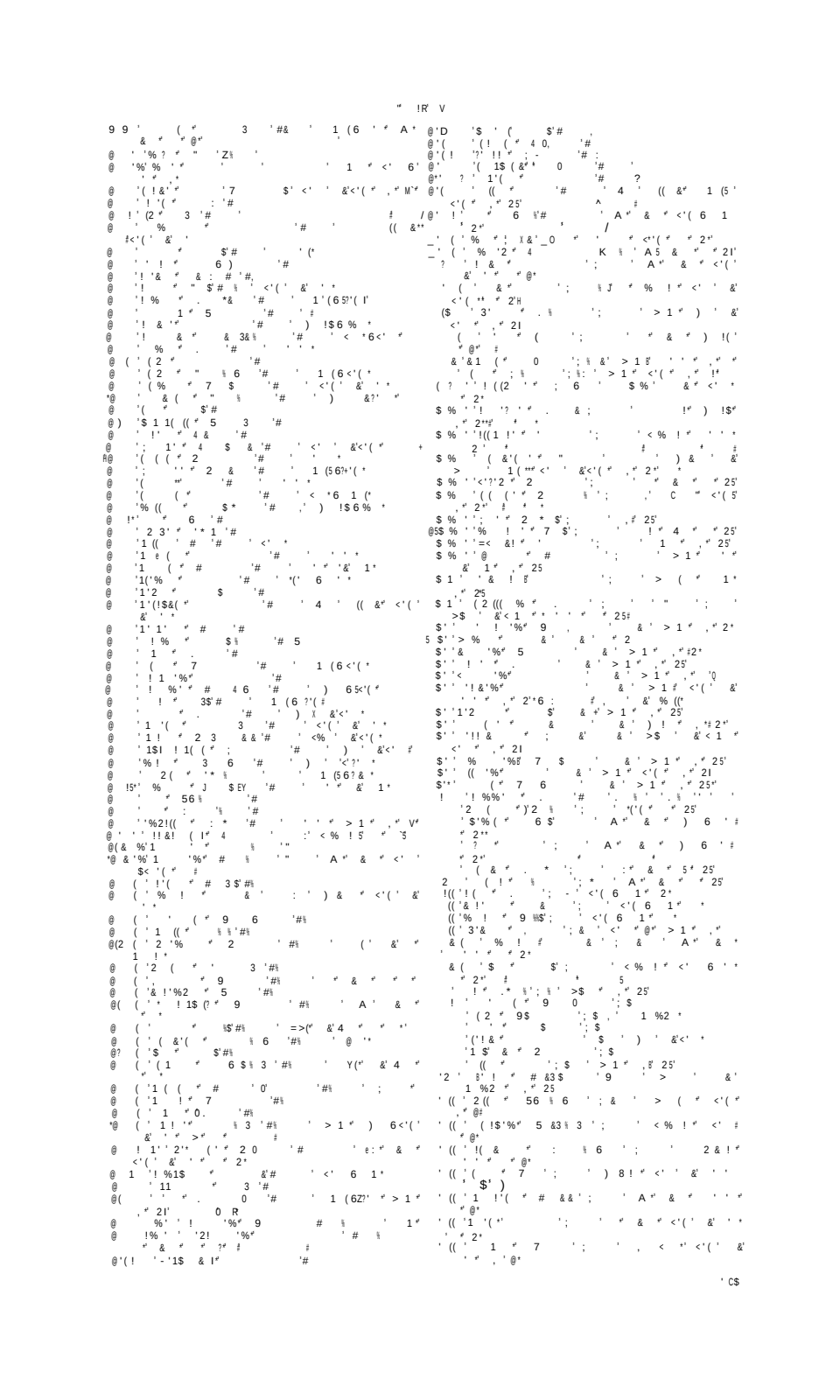

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1 ( ' ª ' $ ' ' 1!?)' $ ' 2 ' ( ' ' ' ' 1 ƒ 2'' ' ' 1 ! ' ' ' !' &' ' ''& ' ª $ ' ( '1( l' ' (( ' $ '> 1 ' ' , &' 1 ª & ( $ ' % 1 ( ' %2 * ' ! ' !$ & ª ; '5 % ' ª ' 1 ª <'( ' &' ' ª , ª ª H ! ' % ( ª " % '5 % ' @ ' (ª 1 ( 0 &' % ª , * ! ' % 1 ( ª 5 &3 '5 % ' ! ( ª <'( ' & L' ' ª , ª 2* ª ! ' %'! ª 2" ' ' 2 [ª ) 6 1 ª , ª @* ! ''1 ª 5 '5 % ' > ' ( & ª <' ' &'?'( ª , ª @* !!' 1' 1' ª ; ' 5 % ' > 1 ª <' ' &'?' * , ª'@ª ' ª ! ' 2 ª ; '5 % ' > 1 ª ) 6 <'( ª , ª @ª \ ! ' ( ' ª & ' 5 % ' ! ( ' &' ; "" ) 6 1 ª , ª @ª ' ! ' '7 ' ! ª ( ' **$' 5 % ' 2 ª' <' ' &'<'( ª , ª 2'^ ! ( ' ( $ ª ' & : ' ª & ª" <' ' &?'( ª ª 25 ! !'( ' & ª ' & : ' ª & ª ª 21' !'( ' 1( ( ª # ' & : ' < 1 ' &' >$ ª , ª 2'H ' ' , ª ' ' ª ; & ª '((ª ª 25ª ( ' ( ! ª ' ' > ( ª , ª 2'Hª ' ( '! ª % & ' . ' ª > ( ª ' ª ' + ª , ª @ª L' C ' ª # ' < ( C ' ' ' . 4 ' ª < ' > 1>ª < * 6 5<'( ª , ª @* ' ' ( ( ª 5 ' > 1 ª 4 %0 2 ª =ª @* ' $ ( ' ! ( ª . ' ' ) ' &?' ª ' 2 ' ª : ' <' 6 ' ª '' ( ( ' ª 0' ' ) &?'( ª ' $ ( ' ª ' <'( 6 = ª > 1 ª , ª 2* !$ ' 4 '8' % ! ª # % ' ª & ª **2 ! ' 1$ ( ª 1 ( ª % 6 ' $ ' 4 ' (( &ª <' ' &?'( ª , ª 2'H 1$ ( ' & ª K ' 6 ' $ ' 4 ' (( &ª 1 (ª , ª 2* ') $ ' ª 9 $'5 ' A ª' & ª ª 25' 2 % ' ! ( ª . '5 * ' < 55 % ! ª ª 25 2 ' ( ' ( ª A ª' & ª ª 25' &' ' ? & ! ª 5 ' 1' &' 2 $' & ª <' ' &?'( ª ª 2'H > %' ! ( 1$ //1 ª 5 * '5 - ' > 1 ª <'( ª , ª @ª 9 ! ' ' ( 2& ? <'%ª '5 %$' > 1 ª ) 5 ª ª ' ! %' ' ( ' ! '%ª **$' 5 %$' > 1 ª ) 5 1 ª , ª ?* !$ $ ' ! %1( ª **$' % & ' ' > 1 ª <' ( ª , ª 2* ' ( ª ' U 6 ' > 1 ª <'( ª , ª 2' !( ' & ª 5 36 ' 0' 4 ' ' 3' ª & ª ª 25' &( ' ' ( ( ª ( 6 '5 ' ' * ( ' > 11 ª 2 % ' 5 ª ª 2* ' ! (( ª '5 ' @ 'ª <' ª , ª 5 ' & ! '%2 ª 5 '5 ' > 1 ª <'( 6' 1 ª , ª 2 ª ª !!$ ª ( ª ' ( ' > 1 ª ) 6' ' ª , ª ' 81 ª '5 ' 4 ' (( &ª ' ª &' 1 ª , ª ª ' ' ! ª **$' 5 ' > 1 ª <'( 6' 1 ª , ª 2'H ' $ 2 !! ª * & ' 5 ' > 1 ª <' ' &?'( ª , $ ª ' ! '%' 2' & ª 9 * $ '" ' ) & ª : 1 (ª &' % ª , ª 2ª ! % ' !'%ª & &'" ' <' 6 _ ' ª , ª 25' ' ! '%' 2 !'%ª 2 $ ' " ) & ª ) 6 ª > ª' 2'H ' ! '%' ( ' ª U & ' " ' ª ' 1 ª <' 6 1 ª , ª 25 ' ! ' ' ! ª ª **$' " ' 1 ' &' ! ( ' : <' 6 1 ª , ª 25 ' ! ' ( ! 1$ ((' %ª & 4 & ' . ' ) 5' : < ª ª 8585ª , ª 2*

'! '%' ( '%ª 5 &3% 3 ' " ' < % ! ª ª 6 ª' 1* '! '%'( ( '%ª 2 '. ' 1 ª <' ' 6 1 ª , ª 2* '! '%' ) '% ' . $ ' 1 ª <' 6 1 ª , *52 ª '! '% % (( ª 6 % ' " ' ª : ! ª <' ' '(( ª , ª 2* '! '% ( ( '%ª ( % ' " ' 1 ' &'@ ª ' ª <' ' &?'( ª , ª @* '! '% '%ª 2 0 ' " ' 1 ª ) 6H ª ' ª , ª 25 '! '% &'%ª 5 % & ' " ' > 1 ª 5<'( ? , ª 2* $ ( ' & (2 ª 7 '5 ' ª > ( ª , ª @* $ ' $ 'G' & ª 2 ' &' " '5 J >$ ª ª ' ª &' 1 ª , ª 2* $ 2 %' > ! ª . ' ' ª % ª ª 25' $ 2 %' , ' C'% ª / 5 * ' 02 . ' < % ! ª ' ª &' 1 ª ' 25' ( '%' 1( ! '( ª 3 '5 % ' > 1 ª , ª 2I' $ 8'1 ( ª % 6 , , 0' < % ! ª ª 25' 2' 2 ' ª . * '5 ' ª & ª <' ' &?'( ª ª 25 $ %2 ' 1 ! ª 3% '5 $ * ' 5; ª <' ' &'? ( , ª 2 ' H $ %2 ' ! (( ' 7 , ' 5 $ * ' 1 ' &' ( ª <' ' &'? '( ª 5 , ª 25 $ %' ' ( % ª ' '5 $ ' ) ? ! ' &' ) Q ! ª <' ' &'<'( ª 2* $ %' ' ) (( ! $ ª 9 &3' 5 $ ' 1 ª <'( 6 1 * , ª 2 \ (( & '( ' '5 ' < % ! ª <'( ' &' ' ª ª 2'^ % ª 2 ' 5 Z % ' < % ! * <'( ª ª 25' ( ' $'% 5' 6 ª'5 % ' ª % ª ) ' &?' ª ª 25 ' ' ' ! ª $ ' 5& &%&, ' ` & ' ª 2* ' ('2 ( ª . * ' 5 % ' < % ! ª <' ( ' &' ª ª ! ª !$ ( '%' & '(''%ª '5 6 ' > 1 ª ' '((ª , ª 2 * & (! ' ! ( ª 5 33 ' 6 ' ) 8 ! * <'( ª ª 1ª$ & ! ' ! ª . ' 6 ' > ( (ª <'( 6 ' 1 ª ª ** ª & ! % ' & ª # ' 6 ' ª % ª ) 6 <'( ª ª @* & ! ' !'( : ª ' 6 ' A ª' & ª <' 6 ' ª ª ª @ª & ! '% 2 ! ª ", % ' 6 ' ª' & ª <'( ' &' ' ª ª @* & ! 'b ª " ' ,6 ' A ª' & ª <'( 6 1 ª ' ª @* '' ª '5 ' : ª' ' ª , ª ª $ % '& ! & ª 5 '5 ' ª' & ª <'( ' &' ' ª ' ª $ % '% ' ª # & ,' '5 3 3 ' < % ! ª <'( ' &' ' ª ' ª 2'(' % 8 % ' ª " ' . ' < % ! 5' <' ' &'?'( 5' ª' ª ª # !$ ( ' 2 ª '5 & ' A ª' & ª ª 21' !$ $ ' ' ª ª 3 ' " ' >$ ª ) ' &' ?' ª ª ª ª 0 1( !'%' $ % 1$ & ! %ª' '5 % ' < Q % ! ª ' ª &' 1 ª ª ' '% ' % ª . '5 % ' ª' & ª ª 25 '% ' ; 11 ( ª &3 $ % ' 5 % ' < % *! ' &' (ª <'( ' &' ' ª' ª 2'H '% '( % ( 2 ª 9 6 '5 % ' A ª' * & ª **<'( ª ª 2* 1? ('%' (' ? ' ( ' 1( ª * % 6 '4 '. ' @ ' ª' <' 6 .M ª' = ª' @* 1? ('%' 1 '%ª @ ' ª 1 ª &' .M ª' ª ª (2 ' (( ! ª ª ( % '5 * ' M> 1 ª <' 6' ' ª' , ª' @ *5 ' ( 1 '2 ' ª . '5 ' > 1 ª <'( 5' , ª @ª ' '! & ª 2 $ '5 ' < % ! ª" <' 6' .M ª' ª ª ' ! %' ª . % & '5 ' ' 5' ª ª ' '(% ( ª / ' 5 ' < % ! ª < 5' 1 ª 5' 2'H ' ! '%' 2' & ª 9 * $ '" ' ) & ª : !! '%' 1$ ( ª 9 ' 7 $' ) '( ' 1 ( ª &' % ª , ª 2ª &' ; ª <' &'?'( ª , ª 25' ! %' ! '%ª % &' ' <' 6 _ ' ª , ª 25' : !! '%' %' % & ( ª & ' 7 : * $' < % ! '! '%' 2 ! '%ª 2 $ ' " ' ª 2ª' H ) 6 ª > ª' 2'H : ( ' ( % ª %' . % 6 ' > ' ( & ª <'( ª '! '%' ( ' ª U & ' " ' ª ' 1 ª ª ª ** ª ª ª ª

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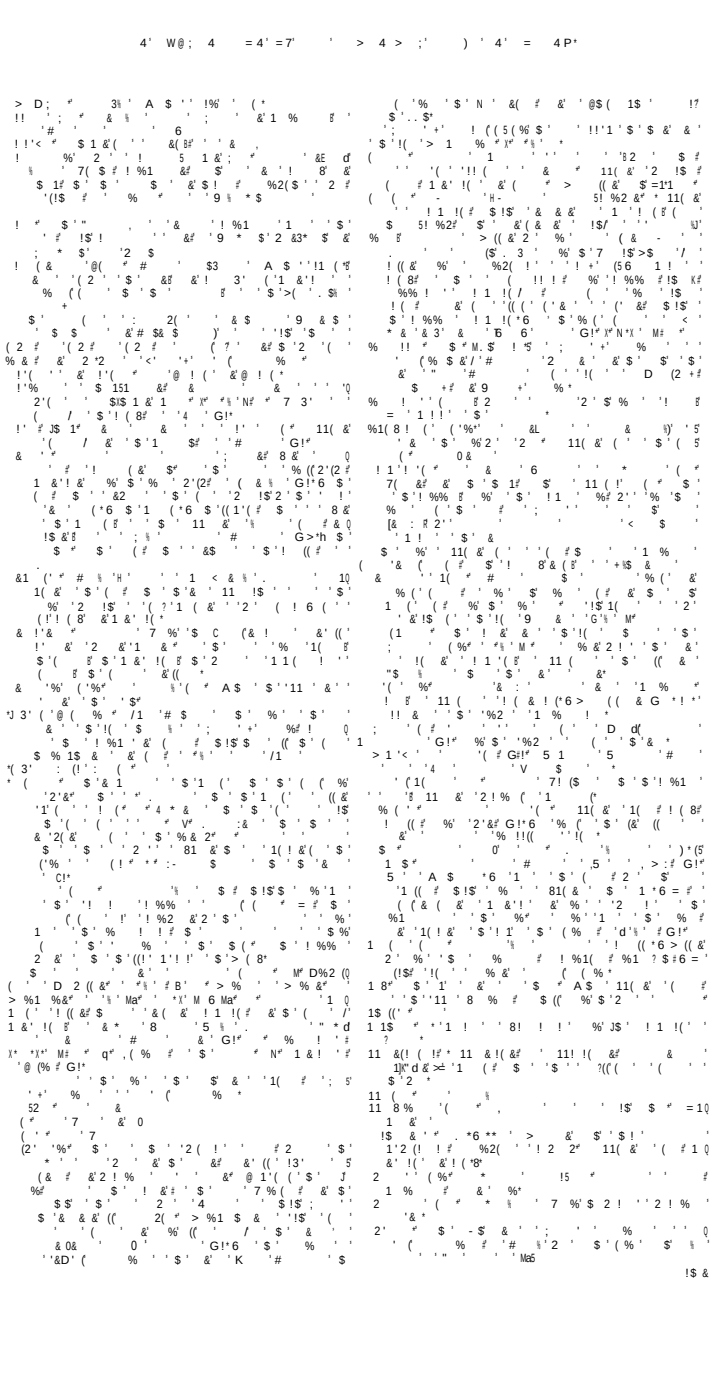

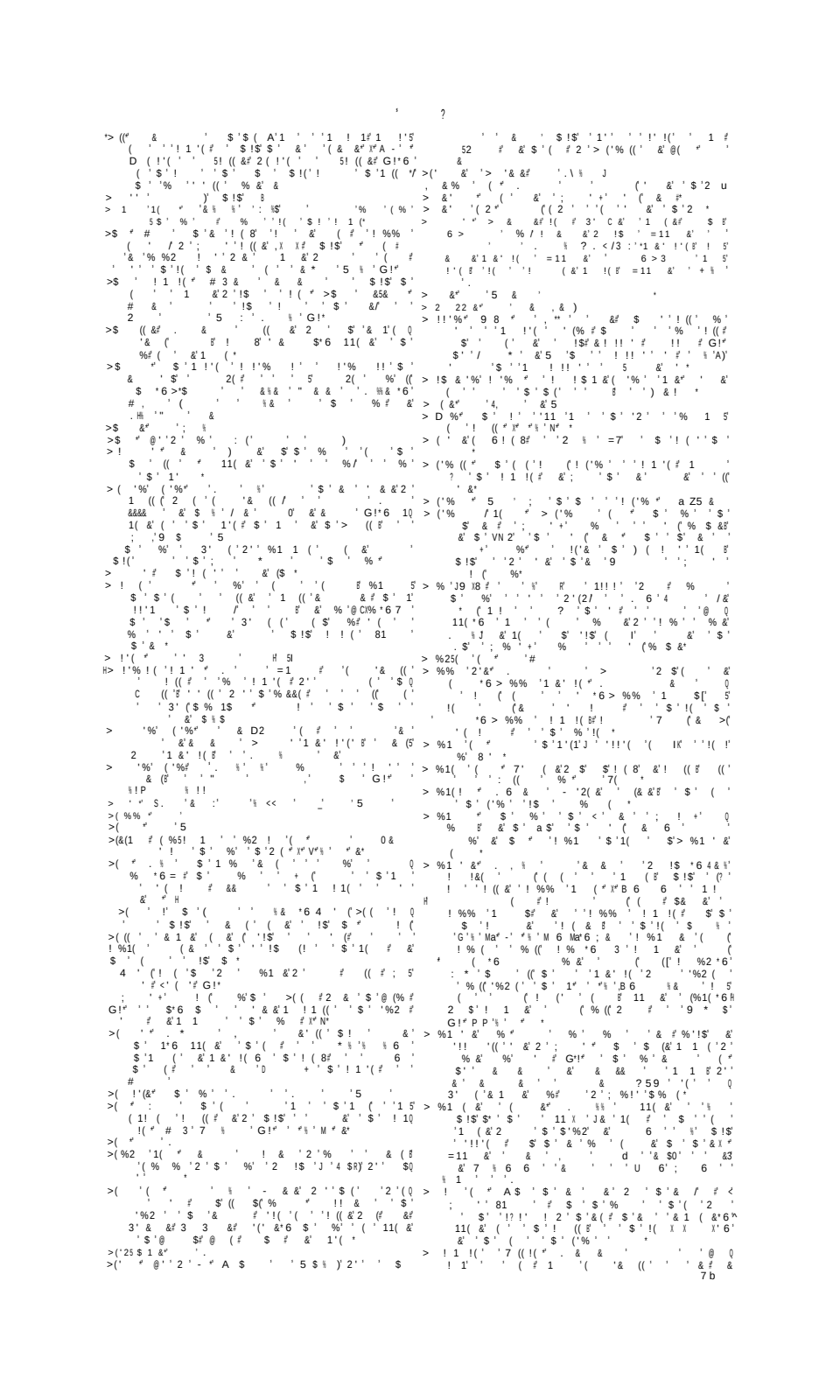

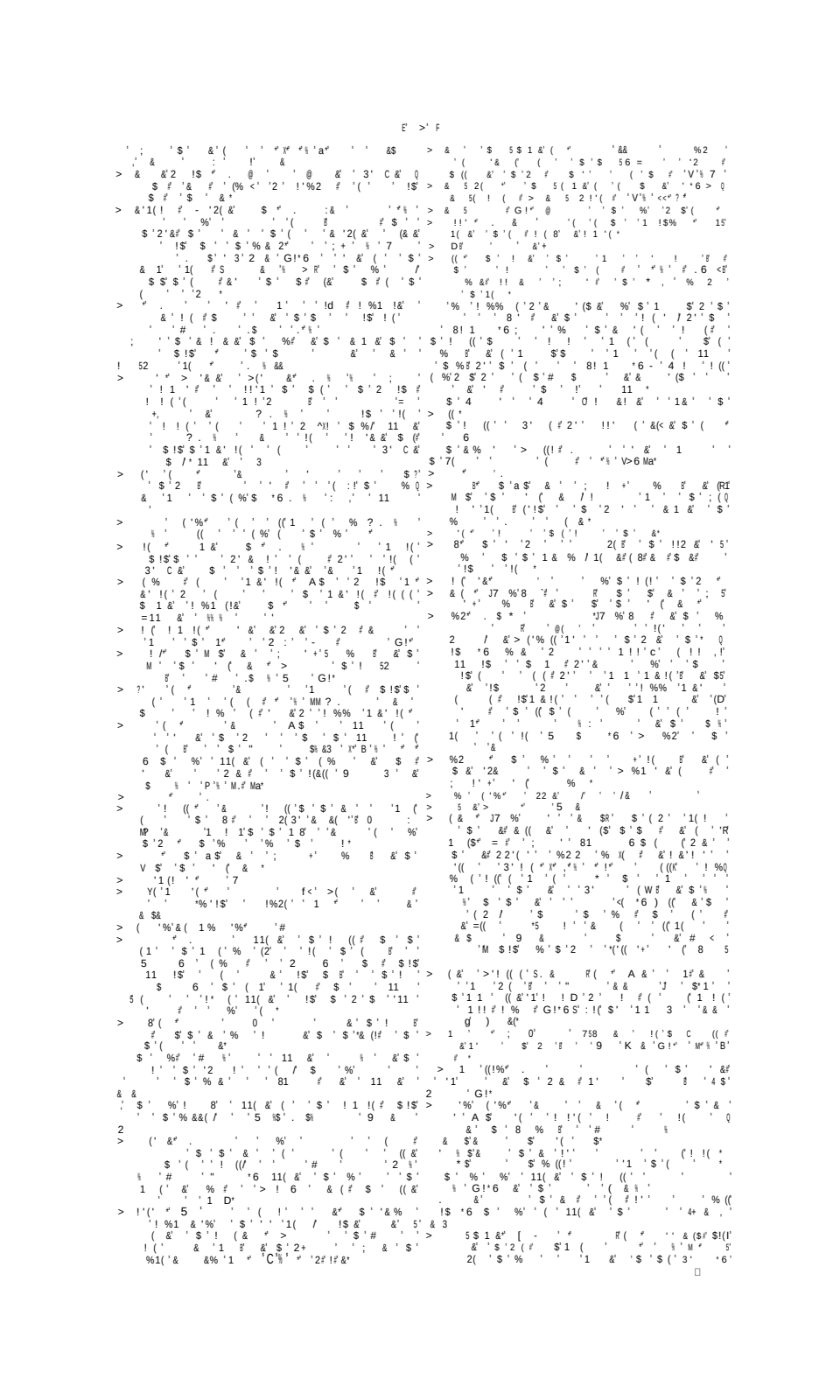

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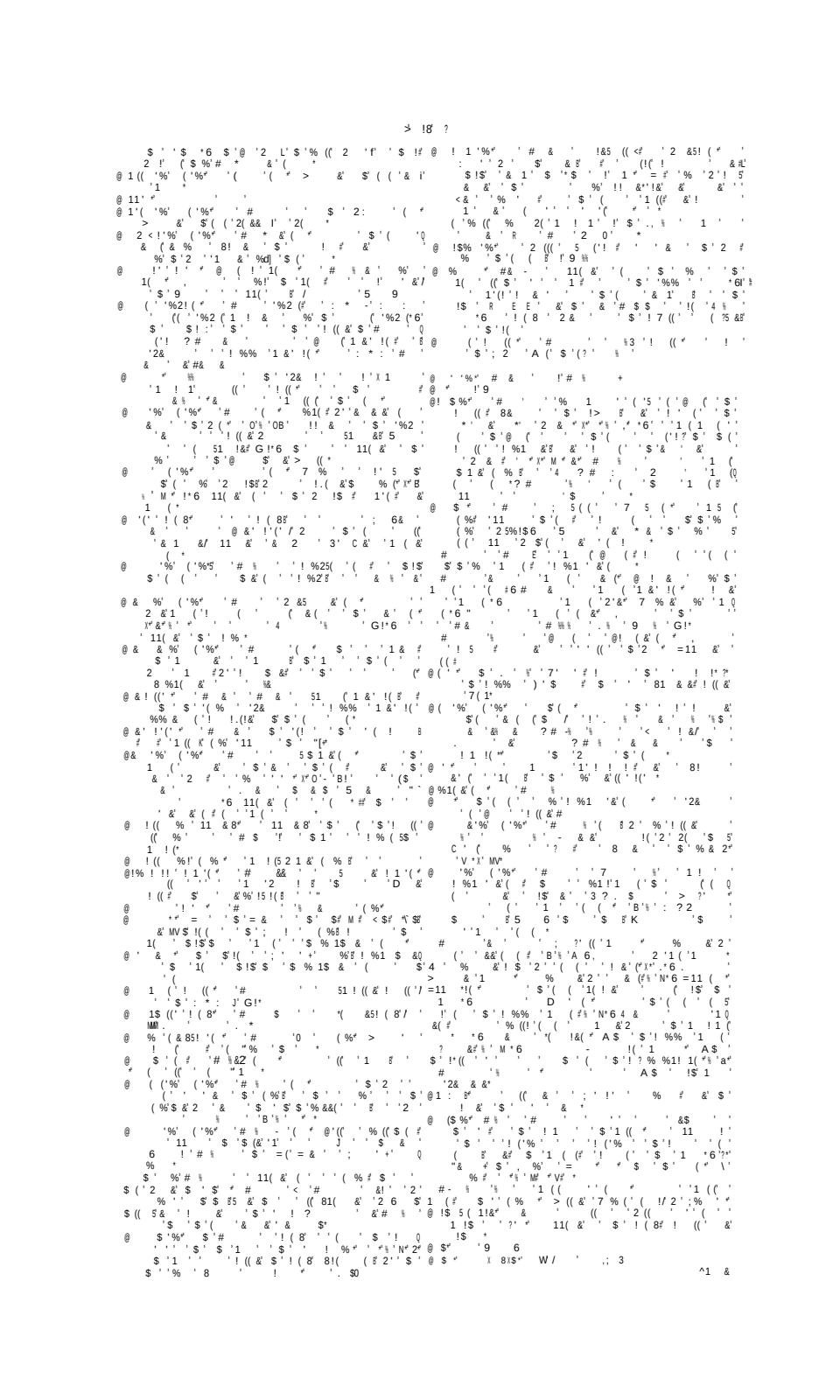

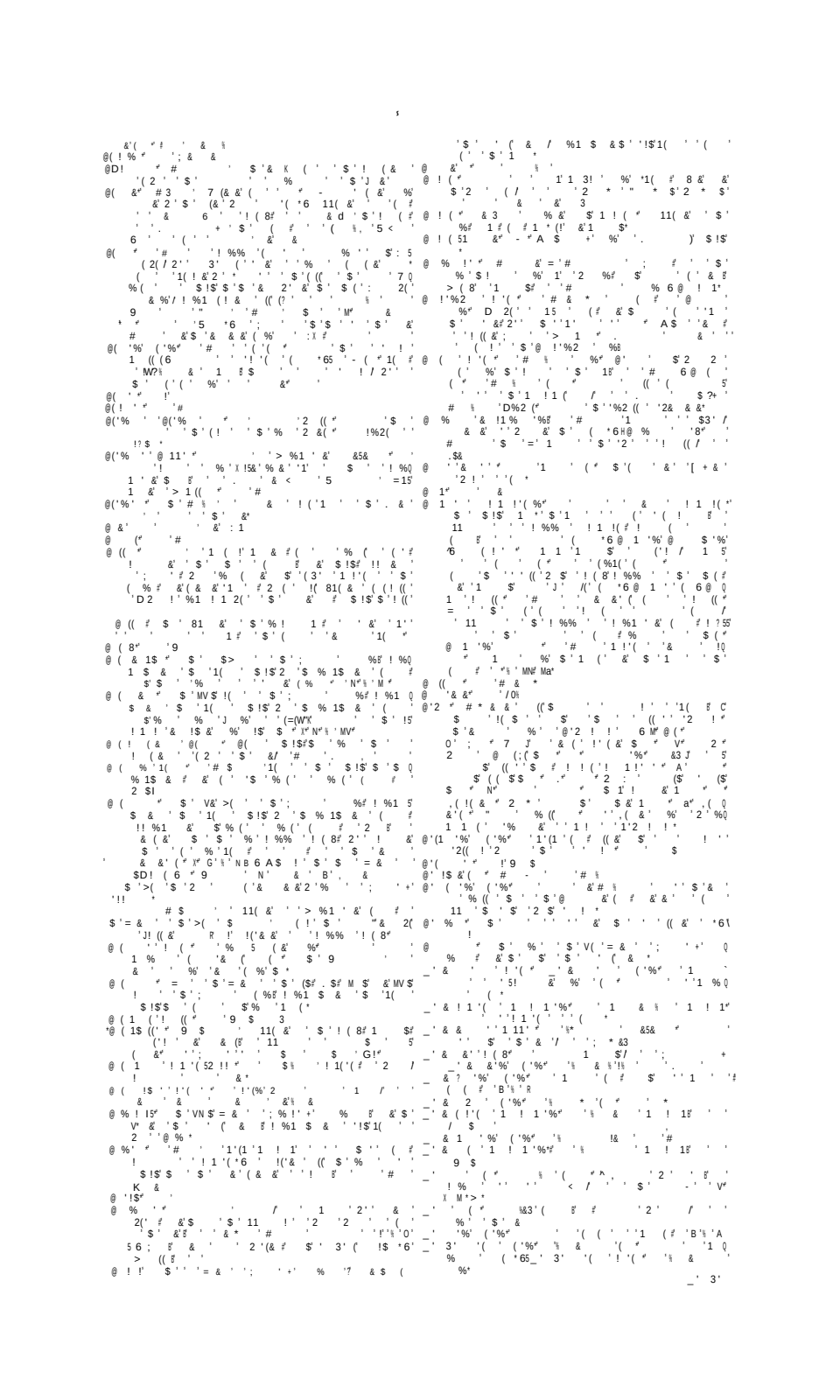

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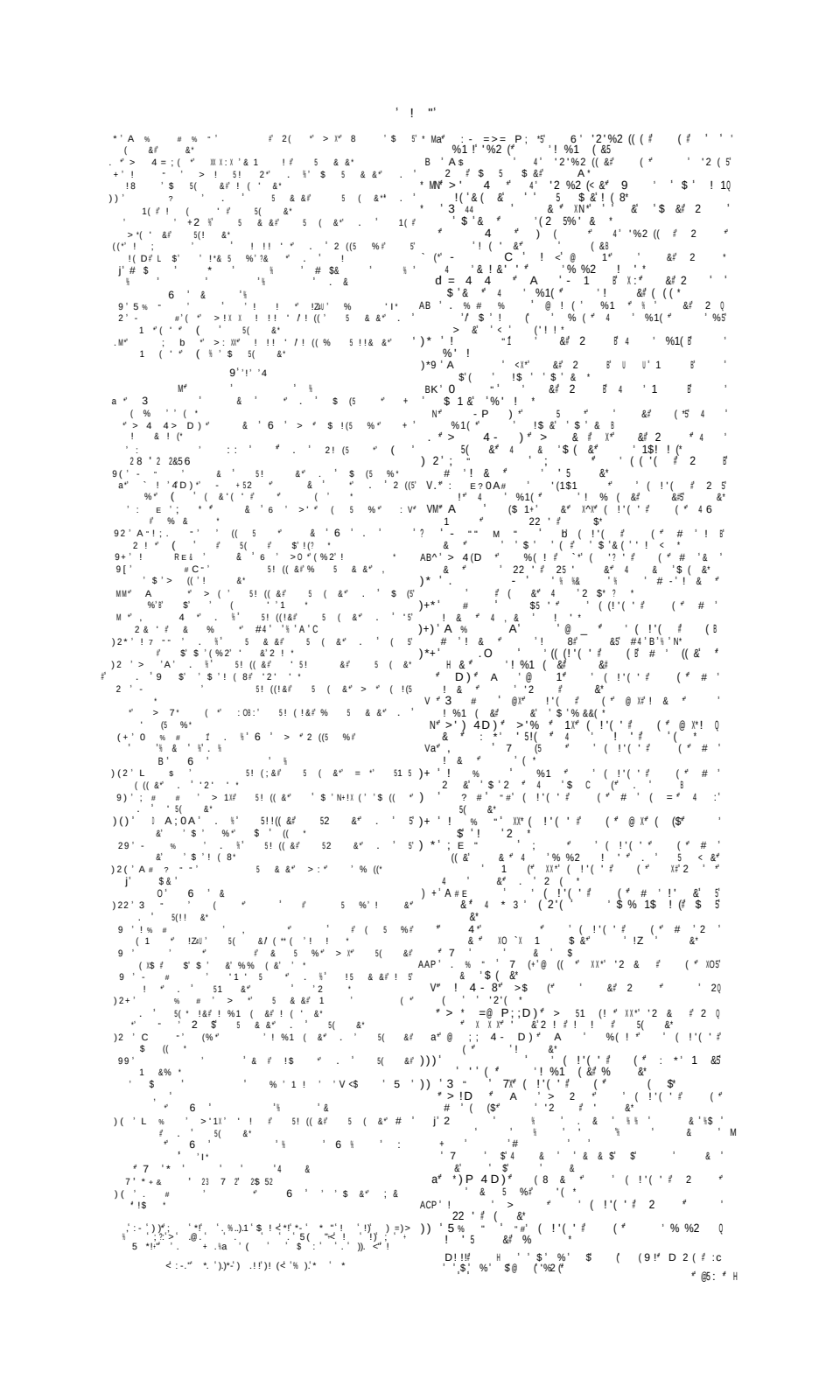

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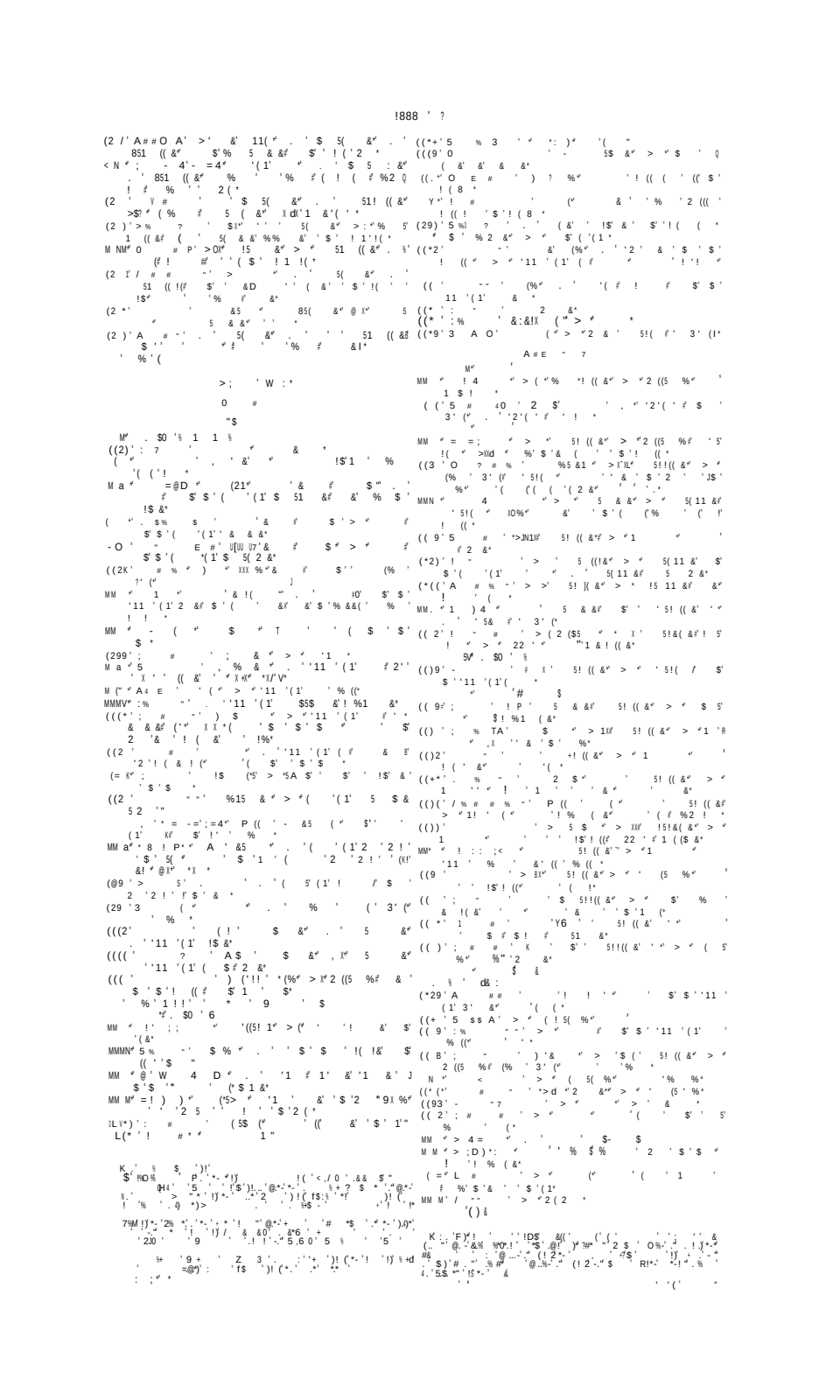

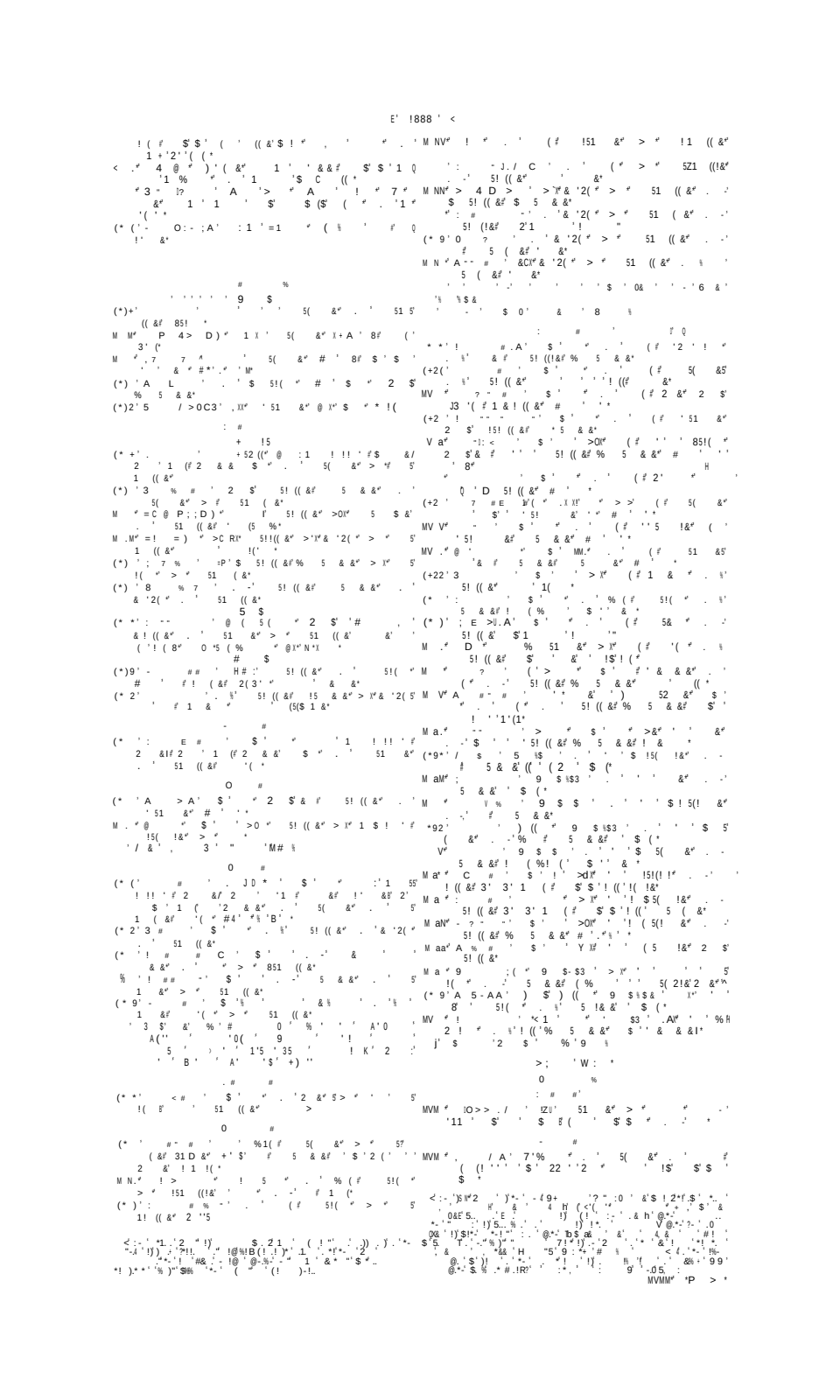

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petalled. *Nect.* a fleshy rim. Female. *Cal.* five-leaved. *Cor.* three or five-petalled. *Nect.* a fleshy rim. *Styles* three bifid. *Capf.* three-celled, tricoccous.

1786. ASTRONIUM. Male. *Cal.* five-leaved. *Cor.* five-petalled. *Nect.* of five glands. Female. *Cal.* five-leaved. *Cor.* five-petalled. *Styles* three. *Seed* one.

1785. MELICYTUS. Male. *Cal.* five-toothed. *Cor.* five-tilled. *Nect.* five scales. *Anth.* five ſeſſile. Female. *Cal. Cor.* and *Nect.* of the male. *Stigma* four or five-lobed. *Capſ.* one-celled, four or five-valved, five-ſeeded.

1787. CANARIUM. Male. *Cal.* two-leaved. *Cor.* three-petalled. Female. *Cal.* two-leaved. *Cor.* three-petalled. *Stigma* ſeſſile. *Drupe.*

1788. XANTHOXYLUM. Male. *Cal.* five-parted. *Cor.* none. Female. *Cal.* five-parted. *Cor.* none. *Piſt.* five. *Capſ.* one-ſeeded.

1789. FRUILLEA. Male. *Cal.* five-parted. *Cor.* five-cleft. *Nect.* Filaments five. Female. *Cal.* five-cleft. *Cor.* five-cleft. *Styles* five. *Berry* inferior.

† *Phyſica dioica. Rhamnus Alaternus Ribes alpinum. Pimpinella dioica. Bryonia dioica. Salix pentandra, nigra. Rhus Vernix, radicans, Toxicodendron.*

## HEXANDRIA.

1800. SMILAX. Male. *Cal.* ſix-leaved. *Cor.* none. Female. *Cal.* ſix-leaved. *Cor.* none. *Styles* three. *Berry* ſuperior, three-celled.

1790. TAMUS. Black Bryony. Male. *Cal.* ſix-parted. *Cor.* none. Female. *Cal.* ſix-parted. *Cor.* none. *Style* trifid. *Berry* inferior, three-celled. *Seeds* two in a cell.

1802. DIOSCOREA. Yam. Male. *Cal.* ſix-leaved. *Cor.* none. Female. *Cal.* and *Cor.* as in the male. *Styles* three. *Capſ.* ſuperior, three-celled.

1801. RAJANIA. Male. *Cal.* ſix-leaved. *Cor.* none. Female. *Cal.* and *Cor.* as in the Male. *Styles* three. *Seed* inferior with an eared wing.

1803. BRAUNIA. Male. *Cal.* three-leaved. *Cor.* three-petalled. *Nect.* ſcales ſix. Female. *Cal.* three-leaved. *Cor.* three-petalled. *Nect.* none. *Stam.* ſix. *Styles* three.

1804. FERREOLA. Male. *Cal.* three-toothed. *Cor.* tubulous, trifid. Female. *Cal.* three-toothed. *Cor.* tubulous, trifid. *Style* one. *Berry* two-ſeeded.

1806. CHAMÆDOREA. Male. *Cal.* three-parted. *Cor.* three-parted. Female. *Cal.* three-parted. *Cor.* three-petalled. *Nect.* ſcales three. *Styles* three. *Drupe* one-ſeeded.

1808. MAURITIA. Male. *Cal.* cup-form, truncated. *Cor.* three-parted. Female. *Cal. Cor. Piſt.* unknown. *Drupe* one-ſeeded, imbricate.

1807. BORASSUS. Male. *Cal.* three-leaved. *Cor.* ſalver-form with a three-parted border. Female. *Cal.* eight or nine-leaved, imbricate. *Cor.* none. *Stam.* eight monadelphous. *Style* none. *Drupe* with three ſtones.

1805. ELAIS. Male. *Cal.* ſix-leaved. *Cor.* ſix-cleft. Female. *Cal.* ſix-leaved. *Cor.* ſix-petalled. *Style* one. *Stigmas* three. *Drupe* one-ſeeded.

† *Rumex Acetoſa, Acetoſella, aculeatus. Lorantbus europæus. Phœnix farinifera.*

## OCTANDRIA.

1809. POPULUS. Poplar. *Ament* cylindrical. *Cal.* a jagged ſcale. *Cor.* turbinate, oblique, entire. *Stam.* eight to ſixteen. Female. *Ament* cylindrical. *Cal.* a jagged ſcale. *Cor.* turbinate, entire. *Stigmas* four. *Capſ.* ſuperior, two-celled, two-valved. *Seeds* pappoſe.

1811. RHODIOLA. Roſe-root. Male. *Cal.* four-parted. *Cor.* four-petalled. *Nect.* four, emarginate. Female. *Cal.* four-parted. *Cor.* four-petalled. *Nect.* four, emarginate. *Piſt.* four. *Capſ.* four, many-ſeeded.

1810. COMMIPHORA. Male. *Cal.* bell-form, four-toothed. *Cor.* four-petalled. Female unknown.

1816. MARGARITARIA. Male. *Cal.* four-toothed. *Cor.* four-petalled. Female. *Cal.* and *Cor.* as in the male. *Styles* four or five. *Berry* four or five-ſeeded in a pentacoccous aril.

1814. HERMESIA. Male. *Cal.* two or three-leaved. *Cor.* none. *Filam.* very ſhort. Female. *Cal.* four-leaved. *Cor.* none. *Styles* two.

† *Laurus nobilis. Acer rubrum. Vallisneria octandra.*

## ENNEANDRIA.

1814. MERCURIALIS. Mercury. Male. *Cal.* three-parted. *Cor.* none. *Stam.* nine to twelve. *Anth.* globular, twin. Female. *Cal.* three-parted. *Cor.* none. *Styles* two. *Capſ.* dicoccous, two-celled. *Seeds* ſolitary.

1815. HYDROCHARIS. Male. *Cal.* trifid. *Cor.* three-petalled. *Filam.* the three inner ones appendiculed. Female *Cal.* trifid. *Cor.* three-petalled. *Styles* ſix. *Capſ.* inferior, ſix-celled, many-ſeeded.

1816. TRIFLARIS. Male. *Cal.* three-parted. *Cor.* three-petalled. *Stam.* nine. Female. *Cal.* three-parted. *Cor.* three-petalled. *Styles* three. *Capſ.* one-ſeeded, three-valved.

† *Laurus. Expetrum nigrum.*

## DECANDRIA.

1817. CARICA. Papaw Tree. Male. *Cal.* ſcarcely any. *Cor.* five-cleft. Female. *Cal.* five-toothed. *Cor.* five-petalled. *Stigmas* eight. *Berry* many-ſeeded.

1818. GYMNOCLADUS. Male. *Cal.* five-toothed. *Cor.* five-petalled. Female. *Cal.* five-toothed. *Cor.* five-petalled. *Style* one. *Legume* one-celled, pulpy within.

1819. KIGGELARIA. Male. *Cal.* five-parted. *Cor.* five-petalled. *Nect.* five glands. Female. *Cal.* five-parted. *Cor.* five-petalled. *Styles* five. *Capſ.* five-valved.

1821. CURIARIA. Male. *Cal.* five-parted. *Cor.* none. *Glands* five. Female. *Cal. Cor.* and *Glands* as in the male. *Styles* five. *Capſ.* five, one-ſeeded, covered with the enlarged glands.

1820. SCHINUS. Male. *Cal.* five-cleft. *Cor.* five-petalled. Female. *Cal.* and *Cor.* as in the male. *Berry* tricoccous.

† *Lychnis dioica. Cucubalus Otites, Phytolacca decan. Cynoſphalum paniculata, &c.*

## DODECANDRIA.

1822. STRATIOTES. Male. *Spathe* two-leaved. *Cal.* three-parted. *Cor.* three-petalled. *Nect.* twenty, like ſtamens. *Stam.* eleven to thirteen. Female. *Spathe, Cal. Cor.* and *Nect.* as in the male. *Styles* ſix, two-parted. *Berry* ſix-celled, many-ſeeded.

More properly placed in Polyandria Hexagynia.

1824. EUCLEA. Male. *Cal.* five-toothed. *Cor.* five-parted. *Stam.* fifteen. Female. *Cal.* and *Cor.* as in the male. *Styles* two. *Capſ.* three-celled, berried.

1826. MENISPERMUM. Moon-ſeed. Male. *Cal.* two-leaved. *Cor.* twelve-petalled. Female. *Cal.* ſix-leaved. *Cor.* ſix-petalled. *Berry* tricoccous.

1825. DATISCA. Baſtard Hemp. Male. *Cal.* five-leaved. *Cor.* none. *Anth.* ſeſſile, fifteen. Female. *Cal.* two-toothed, ſuperior. *Cor.* none. *Capſ.* one-celled, many-ſeeded.

1823. TOXICODENDRUM. Male. *Cal.* five to ſeven-leaved. *Cor.* none. *Stam.* ten to twenty. Female. *Cal.* ſeven or eight-leaved, imbricate. *Cor.* none. *Style* one. *Stigmas* three. *Capſ.* three-celled, tricoccous.

## ICOSANDRIA.

1829. ROTTLERA. Male. *Cal.* two-parted. *Cor.* none. *Stam.* thirty to forty. Female. *Cal.* four-toothed. *Cor.* none. *Styles* three. *Capſ.* three-celled, tricoccous, three-ſeeded.

1828. GELONIUM. Male. *Cal.* five-leaved. *Cor.* none. *Stam.* twelve. Female. *Cal.* five-leaved. *Cor.* none. *Style* none. *Stigmas* three, jagged. *Capſ.* three-celled, three-valved, three-ſeeded.

1827. FLACOURTIA. Male. *Cal.* five-parted. *Cor.* none. *Stam.* fifty to an hundred. Female. *Cal.* five-leaved. *Cor.* none. *Stigma* ſtarred, ſeſſile. *Berry* many-celled, with two ſeeds in each cell.

1830. HEDYCARYA. Male. *Cal.* flat, eight or ten-cleft. *Cor.* none. *Anth.* fifty, ſeſſile, bearded. Female. *Cal.* and *Cor.* as in the male. *Germs* numerous. *Nuts* ſix to ten.

† *Spiræa Aruncus. Rubus Chamæmorus. Myrtus dioica.*

## POLYANDRIA.

1835. PERULA. Male. *Cal.* two-leaved. *Pet.* one, concave. *Nect.* ſcales multifid. *Stam.* twenty-four to thirty. Female. *Cal. Cor.* and *Nect.* as in the male. *Germs* four. *Capſ.* three-celled, three-valved, three-ſeeded.

1837. CLIFFORTIA. Male. *Cal.* three leaved. *Cor.* none. *Stam.* thirty. Female. *Cal.* three-leaved. *Cor.* none. *Styles* two. *Capſ.* dicoccous, inferior.

1833. TREWIA. Male. *Cal.* three-leaved. *Cor.* none. Female. *Cal.* four-cleft. *Cor.* none. *Style* one. *Stigmas* four, feathered. *Capſ.* tetracoccous, four-ſeeded.

1832. XYLOSMA. Male. *Cal.* four or five-parted. *Cor.* none. *Nect.* an angular gland. *Stam.* twenty to fifty. Female. *Cal. Cor.* and *Nect.* as in the male. *Style* none. *Stigma* ſubtrifid. *Berry* ſubbilocular. *Seed* two.

1834. HISINGERA. Male. *Cal.* four-leaved. *Cor.* none. *Stam.* fifteen to twenty-five. Female. *Cal.* ſix-leaved. *Cor.* none. *Styles* two. *Berry* twin, two-celled, two-ſeeded.

1836. EMBRYOPTERIS. Male. *Cal.* four-toothed. *Cor.* four-cleft. *Stam.* twenty. *Anth.* bifid. Female. *Cal.* and *Cor.* as in the male. *Stigma* cruciate, ſeſſile. *Pome* eight-ſeeded.

1831. HAMADRYAS. Male. *Cal.* five or ſix-leaved. *Cor.* ten or twelve-petalled. *Stam.* fifty. Female. *Cal.* and *Cor.* as in the male. *Germs* numerous. *Seeds* numerous.

1838. CYCAS. Male. *Ament* imbricate. *Cal.* a ſpathulate ſcale. *Cor.* none. *Anthers* globoſe ſeſſile in the ſcale. Female. *Spadix* compreſſed-ſubpinnal. *Cal.* none. *Cor.* none. *Style* one. *Drupe* one-ſeeded.

1839. ZAMIA. Male. *Ament* ſtrobiliferous. *Cal.* an obovate ſcale. *Cor.* none. *Anth.* gaping by a cleft ſeſſile in the ſcale. Female. *Ament* ſtrobiliferous. *Cal.* ſcales peltate. *Germs* two. *Styles* none. *Berries* two, one-ſeeded.

† *Clematis dioica, virginiana. Thalictrum dioicum. Laurus nobilis. Arum triphyllum. Stratiotes aloides. Populus nigra.*

MONA-

MONADELPHIA.

1840. ARAUCARIA. Male. *Ament* imbricate. *Cal.* scale somewhat woody. *Cor.* none. *Anth.* ten to twelve connate in the scale. Female. *Ament* fibuliferous. *Cal.* scales lanceolate coriaceous two-flowered. *Cor.* none. *Styl.* none. *Stigma* two-valved. *Nut* corraceous, wedge-form, winged at the tip.

1841. JUNIPERUS. Juniper, Cedar, Savin. Male. *Ament* conical. *Cal.* a scale. *Cor.* none. *Stam.* three. Female. *Ament* scales fewer, finally becoming fleshy, and uniting into a three-seeded *Berry*.

1842. TAXUS. Yew Tree. Male. *Cal.* none. *Cor.* none. *Stam.* numerous. *Anth.* peltate, eight-cleft. Female. *Cal.* pitcher-shaped, quite entire. *Style* none. *Seed* one, placed on a berried calyx.

1843. EPHEDRA. Shrubby Horse-tail. Male. *Ament* small. flowered, bifid. *Cal.* a scale. *Cor.* none. *Stam.* seven. Female. *Cal.* imbricate. *Cor.* none. *Pist.* two. *Berry* two-seeded, calycine.

1846. EXOCECARIA. Male. *Ament* cylindrical. *Cal.* a scale. *Cor.* none. *Filam.* three-parted. Female. *Cal.* scales three. *Cor.* none. *Caps.* tricoccous.

1844. CISSAMPELOS. Male. *Cal.* none. *Cor.* four-petalled. *Stam.* four. Female. *Cal.* none. *Cor.* none. *Stigmas* three. *Berry* one-seeded.

1852. HORSTFIELDIA. Male. *Cal.* none. *Cor.* trifid. Female. *Cal.* none. *Cor.* trifid. *Style* none. *Drupe* one-seeded.

1851. MYRISTICA. Nutmeg Tree. Male. *Cal.* none. *Cor.* bell-form, trifid. Female. *Cal.* none. *Cor.* bell-form, trifid. *Style* one. *Drupe* with an arilled nut one-seeded.

1847. DRYANDRA. Male. *Cal.* two-leaved. *Cor.* five-petalled. *Stam.* nine. Female. *Cal.* two-leaved. *Cor.* five-petalled. *Caps.* woody, tetracoccous, or pentacoccous.

1845. BATSCHIA. Male. *Cal.* three-leaved. *Cor.* three-petalled. *Stam.* six, of which three are barren. Female. *Cal.* and *Cor.* as in the male. *Germs* three. *Drupe* coriaceous, with a half two-celled nut.

1836. LATANIA. Male. *Spathe* many-leaved. *Cal.* three-leaved. *Cor.* three-petalled. *Stam.* fifteen or sixteen. Female. *Drupe* corticofe, with three ftones in it.

1848. LOUREIRA. Male. *Cal.* five-parted. *Cor.* bell-form, five-cleft. *Stam.* eight to thirteen. Female. *Cal.* and *Cor.* as in the male. *Caps.* dicoccous, two-celled.

1835. XANTHIE. Male. *Cal.* five or fix-parted. *Cor.* five or fix-petalled. Female. *Cal.* and *Cor.* as in the male. *Stigmas* five or fix feffile. *Caps.* five or fix-celled, many-feeded.

1850. ADELIA. Male. *Cal.* three-parted. *Cor.* none. *Stam.* twenty. Female. *Cal.* five-parted. *Cor.* none. *Styles* three. *Caps.* tricoccous.

1849. ALCHORNEA. Male. *Cal.* three or five-leaved. *Cor.* none. *Stam.* eight. Female. *Cal.* five-toothed. *Cor.* none. *Caps.* dicoccous.

1838. NEPENTHES. Male. *Cal.* four-parted. *Cor.* none. Female. *Cal.* four-parted. *Cor.* none. *Stigma* peltate, feffile. *Caps.* four-celled, many-feeded.

1834. RUSCUS. Butcher's broom, Alexandrian Laurel. Male. *Cal.* fix-leaved. *Cor.* none. *Nect.* ovate, tubulous, flaminiferous within. Female. *Cal. Cor.* and *Nect.* of the male. *Stam.* none. *Style* one. *Berry* fuperior, three-celled, two-feeded.

† *Salix fiffa, rubra? Crowiana. Bryonia dioica. Sida dioica. Varius Croton* and *Ricini.*

GYNANDRIA.

1837. CLUYTIA. Male. *Cal.* five-leaved. *Cor.* five-petalled. *Stam.* five. Female. *Cal.* five-leaved. *Cor.* five-petalled. *Styles* three. *Caps.* tricoccous.

The genera of this Clafs alfo are difperfed among various Natural Orders. Several of the Palms are properly arranged under the Clafs Dioecia: as *Phoenix, Boraffus, Elaeis, Cycas* and *Zamia*, which Linnæus arranged with the Ferns, are Palms. *Valisneria* and *Hydrocharis*, are alfo fubjoined to them in the firft Natural Order. *Reftia* alone belongs to the third Order *Calamariæ*.—The eleventh Order *Sarmentaceæ* embraces many of the genera—as *Rufcus, Smilax, Tamus, Dioscorea, Rajania, Menifpermum, Ciffampelos.* The twelfth, *Bolaceæ* has only two, *Ireffine* and *Spenacia.* The thirteenth *Succulentæ* has but one, *Rhodiola.* The fixteenth *Calycifloræ* has three, *Oyris, Hippophae* and *Trapbis.* The thirty-fourth *Cucurbitaceæ* has only *Feuillea.* The thirty-feventh *Columniferæ* contains *Kiggelaria* and *Nopæa.* The thirty-eighth *Tricoccæ*—has *Excecaria, Mercurialis, Carica, Ciffortia, Adelia, Clutia.* *Schinus* ftands alone in the forty-third Order *Damafe*, as *Xanthoxylon* does in the forty-fixth, *Hederaceæ.* The fifteth Order *Amentaceæ* contains *Salix, Myrica, Platicia* and *Populus.* The fifty-firft *Coniferæ* has *Juniperus, Taxus* and *Ephedra.* The fifty-third *Scabridæ* has *Citrujus, Cannabis, Humulus* and *Acnidus.* Finally Linnæus placed *Cycas* and *Zamia* in the fifty-fifth Natural Order of *Filices* or *Ferns.*

In Juffieu's Genera Plantarum the plants of this Clafs will alfo be found in a great variety of his Natural Orders. He has placed *Cycas* and *Zamia* among his *Juliceæ.* Several of the Palms are in the firft Order of his third Clafs: as *Phoenix, Elaeis, Lontarus, Borafſus.—Ruſcus, Smilax, Tamus, Dioſcorea* and *Rajania* are among his *Aſparagi.—Reſtia* alone is in the Order of *Juncæ.—Valiſneria* and *Hydrocharis* are in the *Hydrocharides.* —*Oyris* and *Hippophae* in the *Elæagni. Spinacia* and *Acnida* in the *Atriplices.* The Order of *Amaranthi* has *Ireſine* only: and that of *Ericæ, Empetrum* only. *Viſcum* ſtands ſingle in the *Caprifolia.* The *Malvaceæ* have only *Napæa.* The *Menifperma* have *Menifpermum* and *Ciſſampelos. Rhodiola* ſtands alone in the *Semperviræ. Adelia* in the *Onagræ. Ciſſortia* in the *Roſaceæ. Piſtacia, Canarium, Xanthoxylon* and *Schinus* are among the *Terebinthaceæ.*—But the fifteenth Clafs has the largeſt ſhare. In the firſt Order *Euphorbiæ* we have *Caturus, Excecaria, Mercurialis, Kiggelaria, Adelia* and *Clutia.* In the ſecond *Cucurbitaceæ*, we have *Zanonia, Feuillea, Carica.* In the third *Urticæ*, we have *Cecropia, Hedycaria, Humulus* and *Cannabis.* In the fourth *Amentaceæ*, we have *Salix, Populus* and *Myrica.* In the fifth *Coniferæ*, we have *Ephedra, Taxus*, and *Juniperus.*

## CLASS XXIII.

POLYGAMIA.

MONOECIA.

1858. MUSA. Plantain Tree and Banana Tree. Hermaphr. *Cal.* none. *Cor.* two-petalled. *Stam.* fix, one fertile. *Pift.* one. *Berry* inferior. Male. *Cal.* none. *Cor.* two-petalled. *Stam.* fix, five perfect. *Pift.* one. *Berry* none.

1863. HOLCUS. Soft-grafs. Indian Millet. Hermaphr. *Glume* one-flowered, two-valved. *Stam.* three. *Styles* two. *Seed* one. Male. *Glume* one-flowered, two-valved. *Stam.* three.

1860. TETRAPOGON. *Cal.* two-valved, three-flowered, the two lateral hermaphrodite, the central one neuter. Hermaphr. *Cal.* none. *Cor.* two-valved, outer valve awned. *Stam.* three. *Styles* two. *Seed* one. Neuter. *Cal.* none. *Cor.* two-valved, with the valves awned.

1862. ANTHROPOGON. *Cal.* one-valved, two-flowered, one hermaphrodite, the other neuter. Hermaphr. *Cal.* none. *Cor.* two-valved, outer valve three-awned; inner bifid. *Stam.* three. *Styles* two. *Seed* one. Neuter. *Cal.* none. *Cor.* two-valved: outer valve bifid, awned below the tip; inner two-awned.

1861. ÆGOPOGON. Hermaphr. *Cal.* two-valved, one-flowered, valves bifid at the tip, awned in the middle. *Cor.* two-valved: outer valve three-awned; inner two awned. *Stam.* three. *Styles* two. *Seed* one. Male, as the hermaphrodite in the flower.

1869. ELYONURUS. *Cal.* one-valved, bifid, two-flowered. Hermaphr. feffile. *Cal.* none. *Cor.* two-valved. *Stam.* three. *Styles* two. *Seed* one. Male pedicelled. *Cal.* one-valved. *Cor* two-valved. *Stam.* three.

1868. ISCHÆMUM. Hermaphr. *Glume* two-flowered, two-valved. *Stam.* three. *Styles* two. *Seed* one. Male. *Glume* the fame. *Stam.* three.

1871. MANISURIS. Hermaphr. *Glume* one-flowered. *Cor.* two-valved. *Stam.* three. *Style* bifid. Male. *Glume* one-flowered. *Cor.* two-valved. *Stam.* three. *Valves* of the calyx all emarginate at the tip and fides.

1870. ÆGILOPS. Hermaphr. *Glume* three-flowered, three-awned. *Stam.* three. *Styles* two. *Seed* one. Male. *Glume* three-flowered, three-awned. *Stam.* three.

1864. CHLORIS. Flowers on one fide. *Cal.* two-flowered. Hermaphr. feffile. Male pedicelled. Hermaphr. *Cal.* none. *Cor.* two-valved. *Awn* terminating. *Stam.* three. *Styles* two. *Seed* one. Male. *Cal.* none. *Cor.* one or two-valved, awned. *Stam.* three.

1863. ANDROPOGON. Hermaphr. *Glume* one-flowered, awned at the base. *Stam.* three. *Styles* two. *Seed* one. Male. *Glume* one-flowered, awned at the base. *Stam.* three.

1872. COLLADOA. *Cal.* one-valved, bifid, three-flowered: male fingle; hermaphr. two together. Hermaphr. *Cal.* none. *Cor.* two-valved, awned. *Stam.* three. *Styles* two. *Seed* one. Male. *Cal.* none. *Cor.* two-valved, awnleſs. *Stam.* three.

1867. APLUDA. *Cal.* one-valved, three-flowered. Hermaphr. feffile in the middle; male and neuter pedicelled. Hermaphr. *Cal.* double, outer one-valved, inner two-valved one-flowered. *Cor.* two-valved. *Stam.* three. *Styles* two. *Seed* one. Male. *Cal.* two-valved, two-flowered. *Cor.* two-valved. *Stam.* three.

1862. ANTHISTIRIA. *Cal.* four-valved, three or ſeven-flowered, hermaphr. central, feffile, males two pedicelled, the reſt, if any, feffile. Hermaphrodite. *Cal.* none. *Cor.* two-valved. *Awn* from the baſe of the germ. *Stam.* three. *Styles* two. *Seed* one. Male. *Cal.* none. *Cor.* two-valved, awnleſs. *Stam.* three.

1874. VALANTIA. Crofswort. Hermaphr. *Cal.* none. *Cor.* four-parted. *Stam.* four. *Style* bifid. *Seed* one. Male. *Cal.* none. *Cor.* three or four-parted. *Stam.* three or four.

1877. PLANERA. Hermaphr. *Cal.* bell-form, four-cleft. *Cor.* none. *Stam.* four. *Stigmas* two, feffile. *Nut* one-feeded, ſcaleletted. Male. *Cal.* bell-form, four-cleft. *Cor.* none. *Stam.* four, ſtanding out.

1879. DIDYMANDRIA. Hermaphr. *Cal.* four-parted. *Cor.* four-cleft. *Stam.* one, bearing two anthers. *Styles* three, very short. Female. *Cal.* four-parted. *Cor.* four-cleft. *Styles* three, very short. *Berry* three-celled, three-seeded.

1893. CASTELIA. Hermaphr. *Cal.* four-toothed. *Cor.* four-petalled. *Stam.* eight. *Germ* four-lobed. *Style* one. *Drupes* four, one-seeded. Male. *Cal.* four-toothed. *Cor.* four-petalled. *Stam.* eight. Rudiment of a pistil.

1897. OPHIOXYLON. Hermaphr. *Cal.* five-cleft. *Cor.* five-cleft. *Stam.* three. *Pist.* one. Male. *Cal.* bifid. *Cor.* five cleft. *Stam.* two.

1896. COPROSMA. *Cal.* five-toothed. *Cor.* funnel-form. *Stam.* five, six or seven. *Styles* two. *Berry* two-seeded. Male. *Cal.* five-toothed. *Cor.* funnel-form. *Stam.* five, six or seven.

1894. CELTIS. Nettle Tree. Hermaphr. *Cal.* five-parted. *Cor.* none. *Stam.* five. *Styles* two. *Drupe.* Male. *Cal.* six-parted. *Cor.* none. *Stam.* six.

1875. KENNEDIA. Hermaphr. *Cal.* spathe two-valved. *Cor.* none. *Nect.* three-leaved, awned. *Anth.* six, sessile. *Style* one. *Berry* one-seeded. Male. *Cal.* spathe two-valved. *Cor.* none. *Nect.* none. *Anth.* six, sessile. Rudiment of a pistil.

1859. VERATRUM. White Hellebore. Hermaphr. *Cal.* none. *Cor.* six-petalled. *Stam.* six. *Pist.* three. *Capf.* three. Male. *Cal.* none. *Cor.* six-petalled. *Stam.* six.

1903. RHAPIS. Hermaphr. *Cal.* trifid. *Cor.* trifid. *Stam.* six. *Pist.* one. *Drupe* one-seeded. Male. *Cal.* trifid. *Cor.* trifid. *Stam.* six.

1905. MARTINEZIA. Hermaphr. *Cal.* three-leaved. *Cor.* three-petalled. *Stam.* six. *Stigma* three-parted, sessile. *Drupe* one-seeded. Female. *Cal.* three-leaved. *Cor* three-petalled. *Stigma* three-parted, sessile. *Drupe* one-seeded.

1904. CEROXYLON. Hermaphr. *Cal.* trifid. *Cor.* three-petalled. *Stam.* one, two, four. Rudiment of a Pistil. Female. *Cal.* trifid. *Cor.* three-petalled. *Stigmas* three, sessile. *Drupe* one-seeded.

1884. TRATTINNICKIA. Hermaphr. *Cal.* bell-form, three-toothed. *Cor.* bell-form, three-toothed. *Stam.* five. *Germ.* superior. *Style* awl-shaped. Male. *Cal.* bell-form, three-toothed. *Cor.* bell-form, three-toothed. *Stam.* five. Rudiment of a Pistil.

1888. STALAGMITIS. Hermaphr. *Cal.* four-leaved. *Cor.* four-petalled. *Stam.* thirty. *Pist.* one. *Berry* one-celled, three-seeded. Male. *Cal.* four-leaved. *Cor.* four-petalled. *Stam.* thirty.

1891. GYROCARPUS. Hermaphr. *Cal.* four-leaved, unequal. *Cor.* none. *Stam.* four. *Nect.* four-parted. *Style* none. *Samara* one-seeded, two-winged at the tip. Male. *Cal.* five-leaved. *Cor.* none. *Nect.* four-parted. *Stam.* four.

1892. ACER. Maple. Hermaphr. *Cal.* five-cleft. *Cor.* five-petalled. *Stam.* eight. *Styles* two. *Capf.* or *Samara* dicoccous, winged. Male. *Cal.* five-cleft. *Cor.* five-petalled. *Stam.* eight.

1883. AILANTHUS. Hermaphr. *Cal.* five-parted. *Cor.* five-petalled. *Stam.* two or three. *Germs* three to five. *Styles* lateral. *Samaras* one-seeded. Male. *Cal.* five-parted. *Cor.* five-petalled. *Stam.* ten. Female. *Cal.* five-parted. *Cor.* five-petalled. *Germs* three to five. *Styles* lateral. *Samaras* one-seeded.

1890. GIMBERNATIA. Hermaphr. *Cal.* five-cleft. *Cor.* none. *Stam.* ten. *Pist.* one. *Samara* one-seeded, two or five-winged. Male. *Cal.* five-cleft. *Cor.* none. *Stam.* ten.

1895. GOUANIA. Chaw-stick. Hermaphr. *Cal.* five-cleft, superior. *Cor.* none. *Stam.* five. *Style* trifid. *Fruit* three-sided, tripartile. Male. *Cal.* five-cleft. *Cor.* none. *Stam.* five.

1886. BRIEDELIA. Hermaphr. *Cal.* five-parted. *Pet.* five inserted into the calyx. *Stam.* five monadelphous. *Styles* two bifid. *Berry* two-seeded. Male. *Cal.* five-parted. *Pet.* five inserted into the calyx. *Filam.* columnar, bearing five anthers. Female. *Cal.* and *Cor.* as in the male. *Styles* two bifid. *Berry* two-seeded.

1900. SCHRANKIA. Hermaphr. *Cal.* five-toothed. *Cor.* five-cleft. *Stam.* eight to ten. *Pist.* one. *Silique* four-valved. Male. *Cal.* five-toothed. *Cor.* five-cleft. *Stam.* eight to ten.

1901. DESMANTHUS. Hermaphr. *Cal.* five-toothed. *Cor.* five-petalled. *Stam.* twenty. *Pist.* one. *Legume* two-valved. Male. *Cal.* five-toothed. *Cor.* none. *Stam.* twenty.

1902. ACACIA. Hermaphr. *Cal.* five-toothed. *Cor.* five-cleft. *Stam.* four to an hundred. *Pist.* one. *Leg.* two-valved. Male. *Cal.* five-toothed. *Cor.* five-cleft. *Stam.* four to an hundred.

1898. INGA. Hermaphr. *Cal.* five-toothed. *Cor.* tubulous five-cleft. *Stam.* an hundred monadelphous. *Pist.* one. *Leg.* two-valved. *Seeds* wrapped in pulp or in an aril. Male. *Cal.* five-toothed. *Cor.* tubulous, five-cleft. *Stam.* an hundred, monadelphous.

1899. MIMOSA. Sensitive and Humble Plant. Hermaphr. *Cal.* five-toothed. *Cor.* none or five-toothed. *Stam.* eight. *Pist.* one. *Lament* splitting into one-seeded joints. Male. *Cal.* five-toothed. *Cor.* none or five toothed. *Stam.* eight.

1881. BRABEJUM. Hermaphr. *Amnt.* *Cor.* four-parted. *Stam.* four. *Style* bifid. *Drupe* with a globose fleshy nucleus. Male. *Amnt.* *Cor.* four-parted. *Stam.* four. *Style* bifid, abortive.

1890. HERITIERA. Hermaphr. *Cal.* five-toothed. *Cor.* none. *Anth.* ten, sessile. *Germs* five. *Styles* five, cohering. *Drupes* five juiceless, keeled and winged. *Seed* solitary. Male. *Cal.* five-toothed. *Cor.* none. *Filam.* columnar. *Anth.* five to ten, united into a cylinder.

1869. HYPELATE. Hermaphr. *Cal.* five-leaved. *Cor.* five-petalled. *Stam.* ten. *Pist.* one. *Drupe* pulpy, one-seeded. Male. *Cal.* five-leaved. *Cor.* five-petalled. *Stam.* ten.

1878. TERMINALIA. Hermaphr. *Cal.* five-parted. *Cor.* none. *Stam.* ten. *Drupe* inferior. Male. *Cal.* five-parted. *Cor.* none. *Stam.* ten.

1885. CLUSIA. Hermaphr. *Cal.* six-leaved. *Cor.* four or six-petalled. *Anth.* aggregate. *Stigmas* four or six. *Capf.* six-celled, many-seeded. Male. *Cal.* four or six-leaved. *Cor.* six-petalled. *Stam.* many.

1882. FERONIA. Hermaphr. *Cal.* five-toothed. *Cor.* five-petalled. *Stam.* ten. *Style* one. *Pome* five-celled, many-seeded. Male. *Cal.* five-toothed. *Cor.* five-petalled. *Stam.* ten.

1897. HERMAS. Hermaphr. *Umbel.* *Cor.* five-petalled. *Stam.* five, barren. Male. *Umbel.* *Cor.* five-petalled. *Stam.* five fertile. *Styles* two. *Seeds* two inferior, cordate-orbicular.

1873. PARIETARIA. Pellitory. Hermaphr. *Cal.* four-cleft. *Cor.* none. *Stam.* four. *Style* one. *Seed* one. Female. *Cal.* four-cleft. *Cor.* none. *Style* one. *Seed* one.

1876. ATRIPLEX. Orache. Hermaphr. *Cal.* five-parted, inferior. *Cor.* none. *Stam.* five. *Style* two-parted. *Seed* one depressed. Female. *Cal.* two-leaved. *Cor.* none. *Style* two-parted. *Seed* one depressed.

† *Æsculus, Mammea, Fraxinus excelsior, Euphorbia, Meliaceæ, Ilex. Guilandina, Moringa, Silene, Saxifragæ, Cicenæ polygynia.*

DIOECIA.

1925. PANAX. Ginseng. Hermaphr. *Umbel.* *Cal.* five-cleft. *Cor.* five-petalled. *Stam.* five. *Styles* two. *Berry* two-seeded. Male. *Umbel.* *Cal.* entire. *Cor.* five-petalled. *Stam.* five.

1911. DIOSPYROS. Date Plum. Hermaphr. *Cal.* four-cleft. *Cor.* four-cleft. *Stam.* eight. *Style* four-cleft. *Berry* eight-seeded. Male. *Cal.* four-cleft. *Cor.* four-cleft. *Stam.* eight.

1928. CHRYSITRIX. Hermaphr. *Glume* two-valved. *Cor.* chaffs numerous. *Stam.* many mixed with the chaffs. *Pist.* one. Male. *Glume* two-valved. *Cor.* chaffs numerous. *Stam.* many, mixed with the chaffs.

1929. SPINIFEX. Hermaphr. *Involucre* two-leaved. *Cal.* two-valved, one-flowered. *Cor.* two-valved. *Stam.* three. *Pist.* one. *Stigmas* two. *Seed* one. Male. *Involucre* two-leaved. *Cal.* two-valved, two-flowered. *Cor.* two-valved. *Stam.* three.

1934. ELEPHANTUSA. Hermaphr. *Cal.* none. *Cor.* none. *Stam.* numerous. *Style* five or six-cleft. *Drupes* several, one-seeded. Male. *Cal.* none. *Cor.* none. *Stam.* numerous, very much chattered.

1932. NUMENZIA. Hermaphr. *Cal.* three-leaved. *Cor.* three-petalled. *Stam.* six. *Stigma* trifid. Female. *Cal.* three-leaved. *Cor.* three-petalled. *Stigma* trifid. *Drupe* one-seeded.

1933. CHAMÆROPS. Fan Palm. Hermaphr. *Cal.* three-parted. *Cor.* three-petalled. *Stam.* six. *Pist.* three. *Drupes* three, one-seeded. Male. *Cal.* three-parted. *Cor.* three-petalled. *Stam.* six.

1926. BREYNIA. *Hermaphr.* *Cal.* six-parted. *Cor.* none. *Anth.* five growing to the style. *Pist.* one. *Capf.* three-celled, six-seeded. Male. *Cal.* five-parted. *Cor.* none. *Nect.* five glands. *Stam.* five. Female. *Cal.* five-parted. *Cor.* none. *Style* none. *Stigmas* five. *Capf.* five-celled, five-seeded.

1921. PENNANTIA. Hermaphr. *Cal.* none. *Cor.* five-petalled. *Stam.* five. *Stigma* peltate, sessile. *Perig.* three-sided, two-seeded. Male. *Cal.* none. *Cor.* five-petalled. *Stam.* five.

1916. STILBE. Hermaphr. *Cal.* outer three-leaved: inner five-toothed, cartilaginous. *Cor.* five-cleft. *Stam.* four. *Style* one. *Seed* one. Male. *Cal.* outer three-leaved: inner none. *Cor.* five-cleft. *Stam.* four.

1918. NYSSA. Hermaphr. *Cal.* five-parted. *Cor.* none. *Stam.* five. *Pist.* one. *Drupe* inferior. Male. *Cal.* five-parted. *Cor.* none. *Stam.* ten.

1919. HAMILTONIA. Hermaphr. *Cal.* five-cleft. *Cor.* none. *Nect.* a five-toothed disk. *Stam.* five. *Pist.* one. *Drupe* inferior. Male. *Cal.* five-cleft. *Cor.* none. *Nect.* a five-toothed disk. *Stam.* five.

1915. LAUROPHYLLUS. Hermaphr. *Cal.* four-leaved. *Cor.* none. *Stam.* four. *Germ* superior. *Style* one. Male. *Cal.* four-leaved. *Cor.* none. *Stam.* four.

1908. FRAXINUS. Ash Tree. Hermaphr. *Cal.* none or four-parted. *Cor.* none or four-petalled. *Stam.* two. *Pist.*

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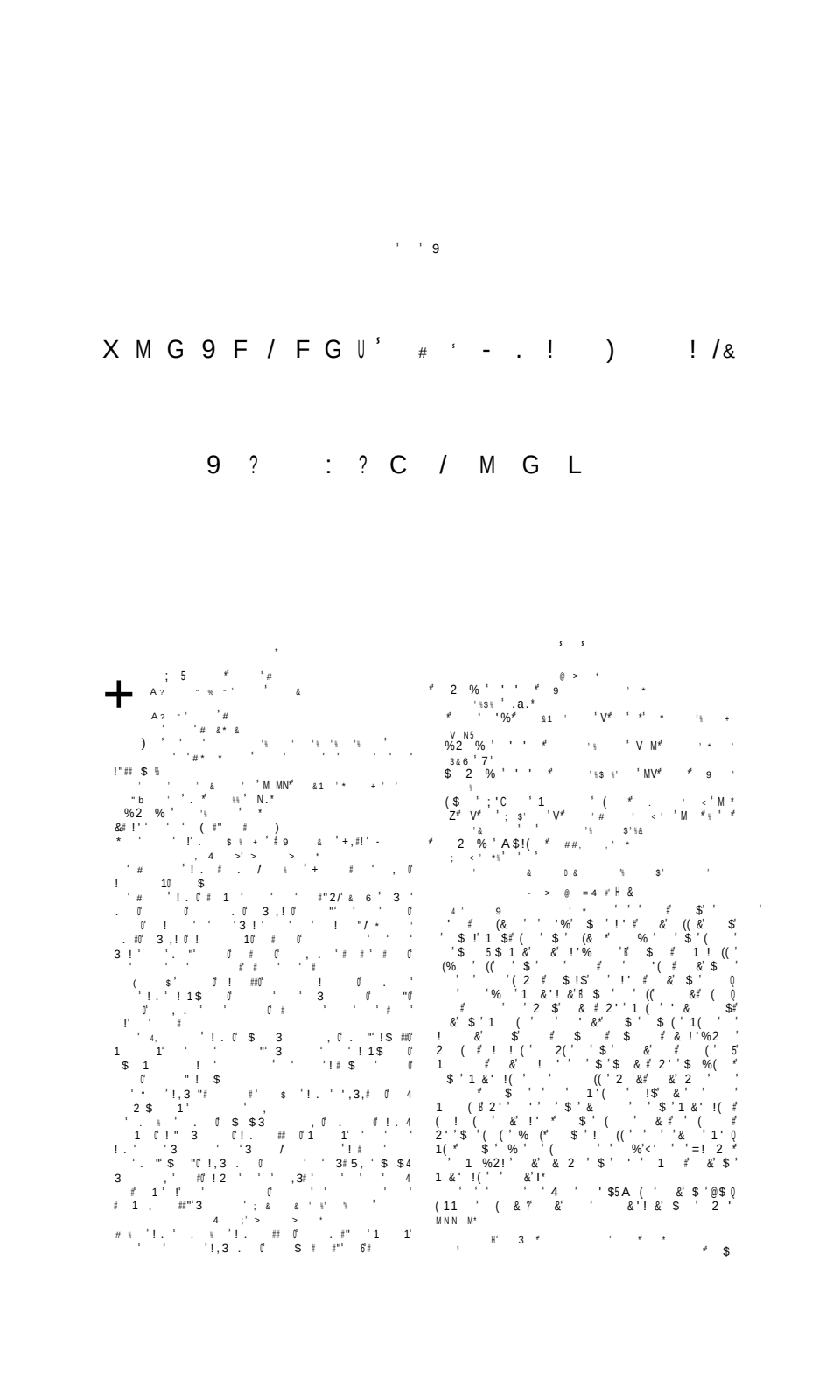

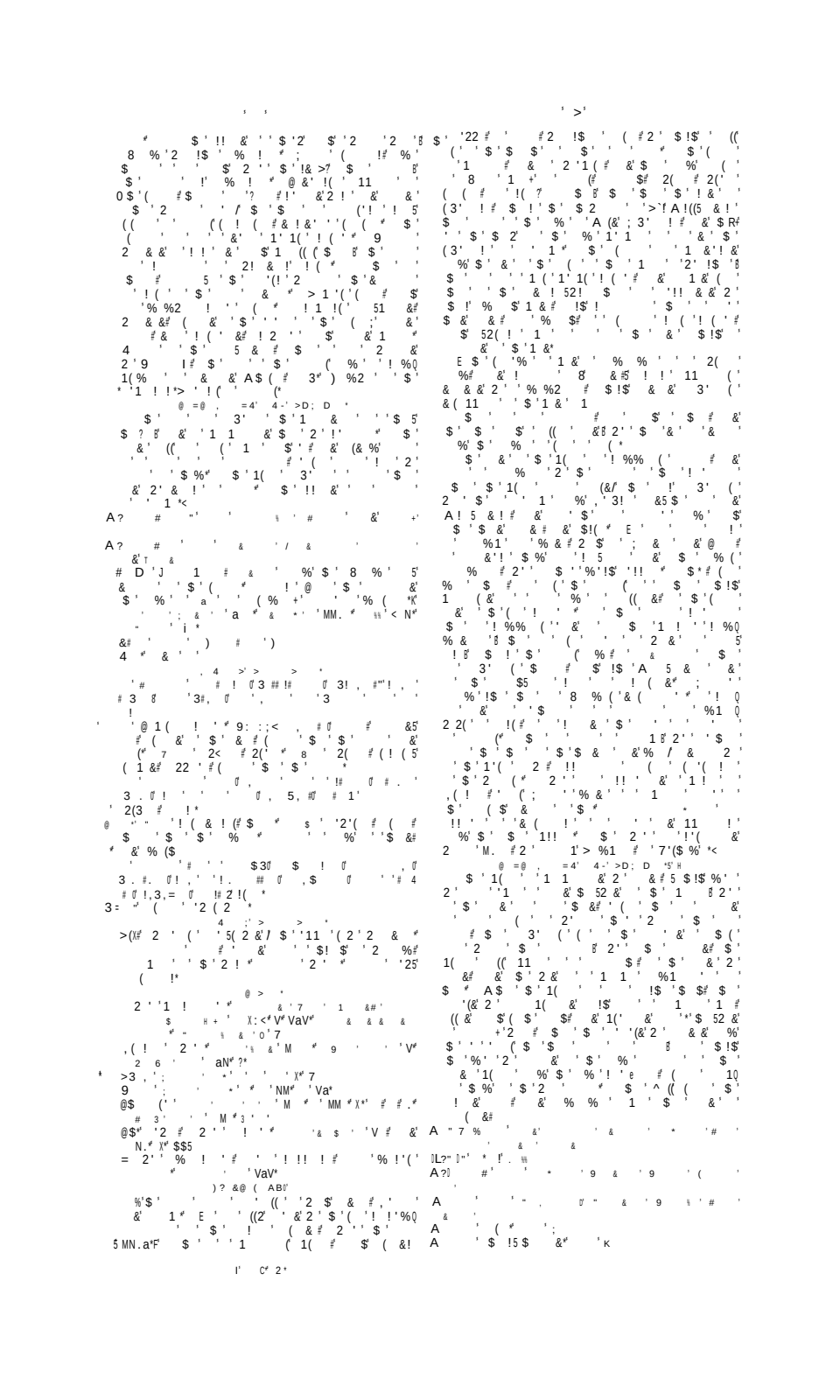

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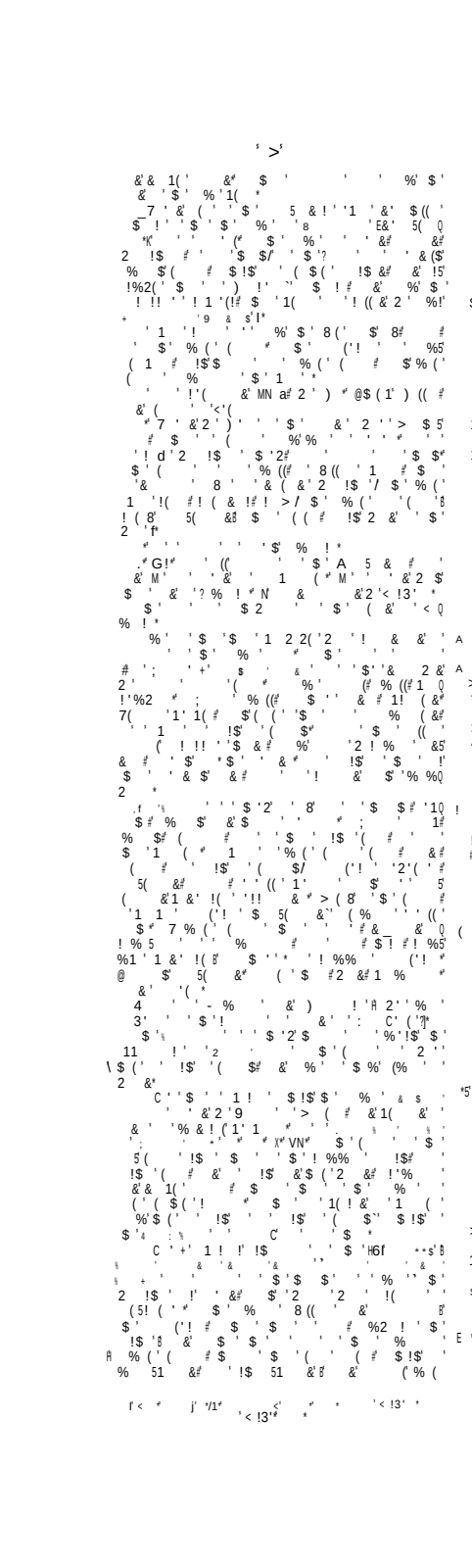

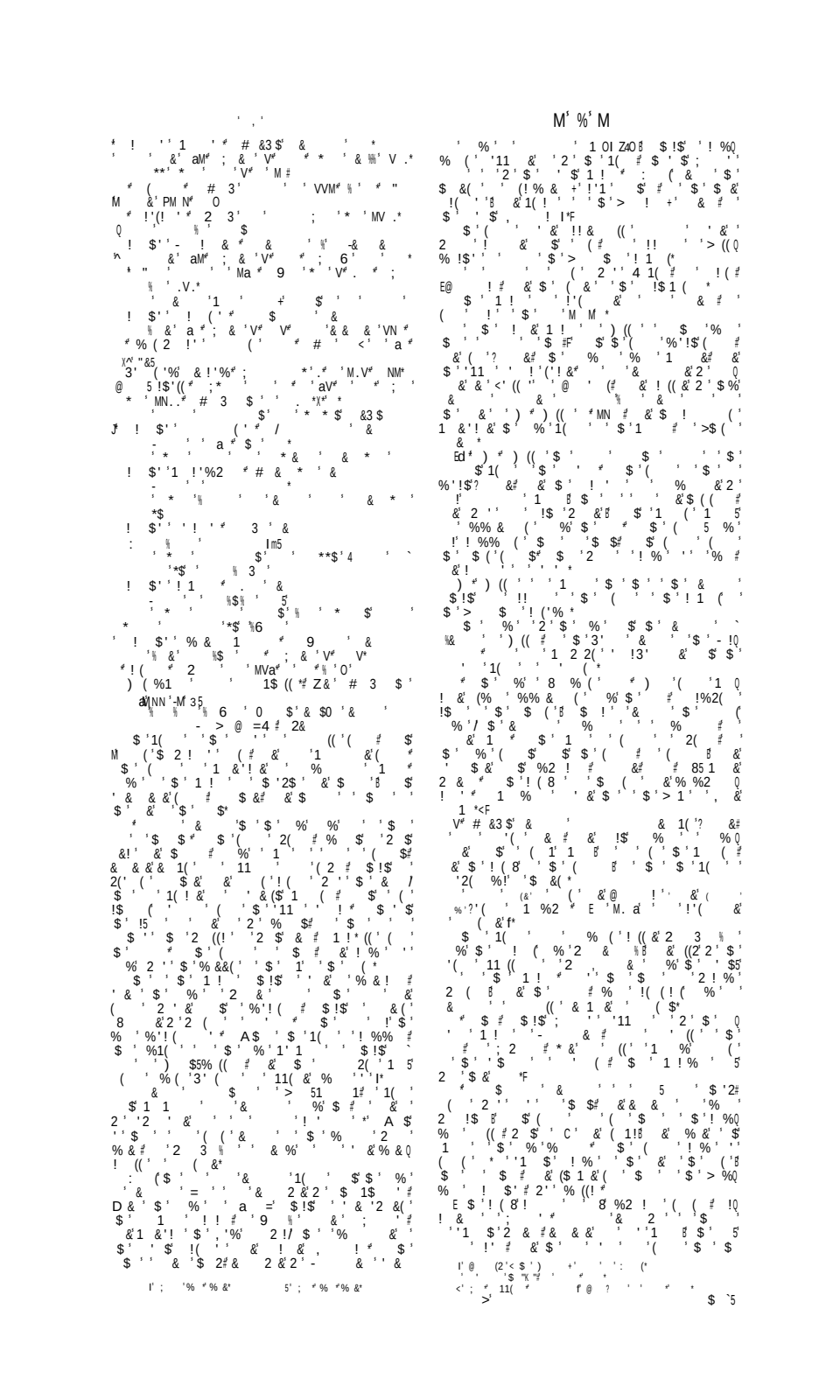

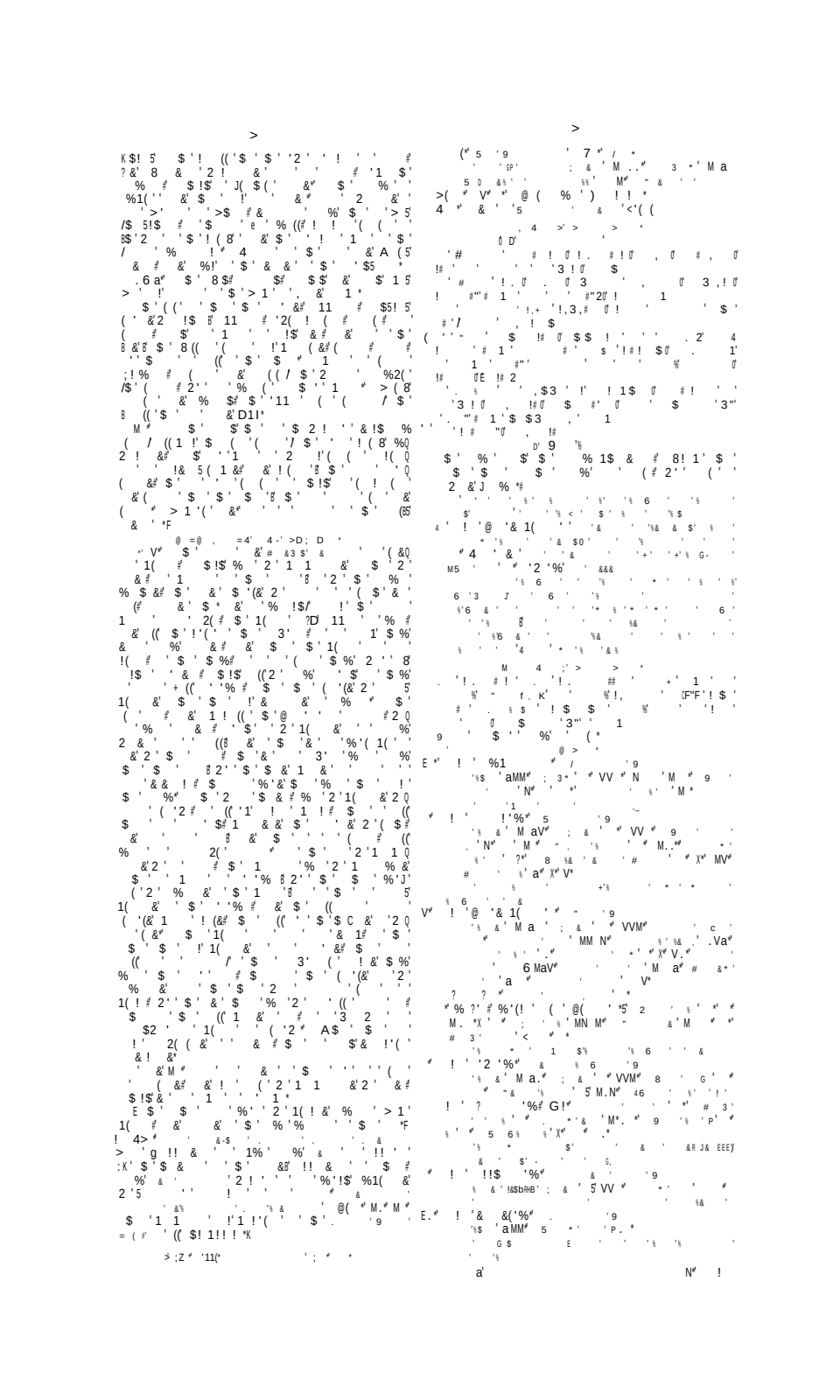

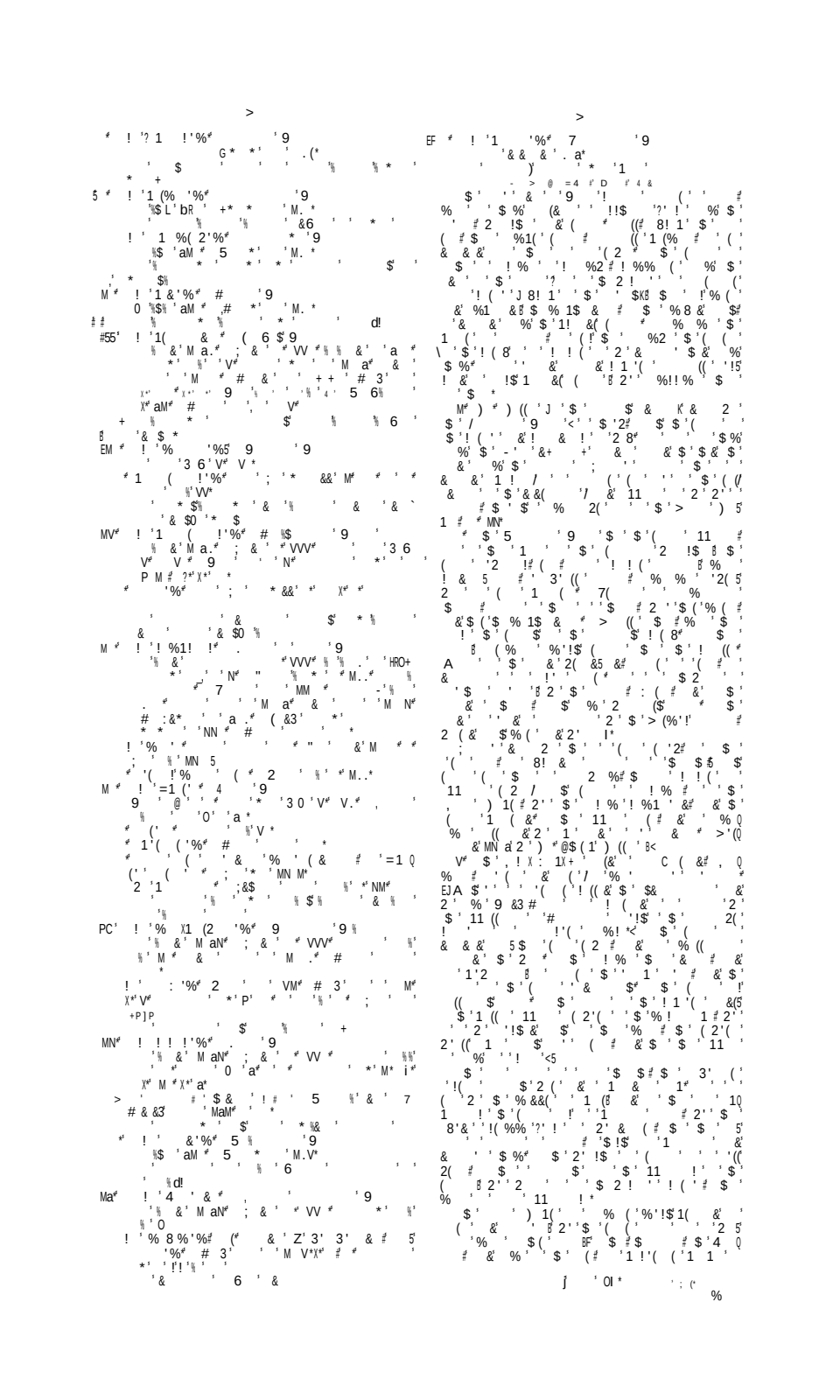

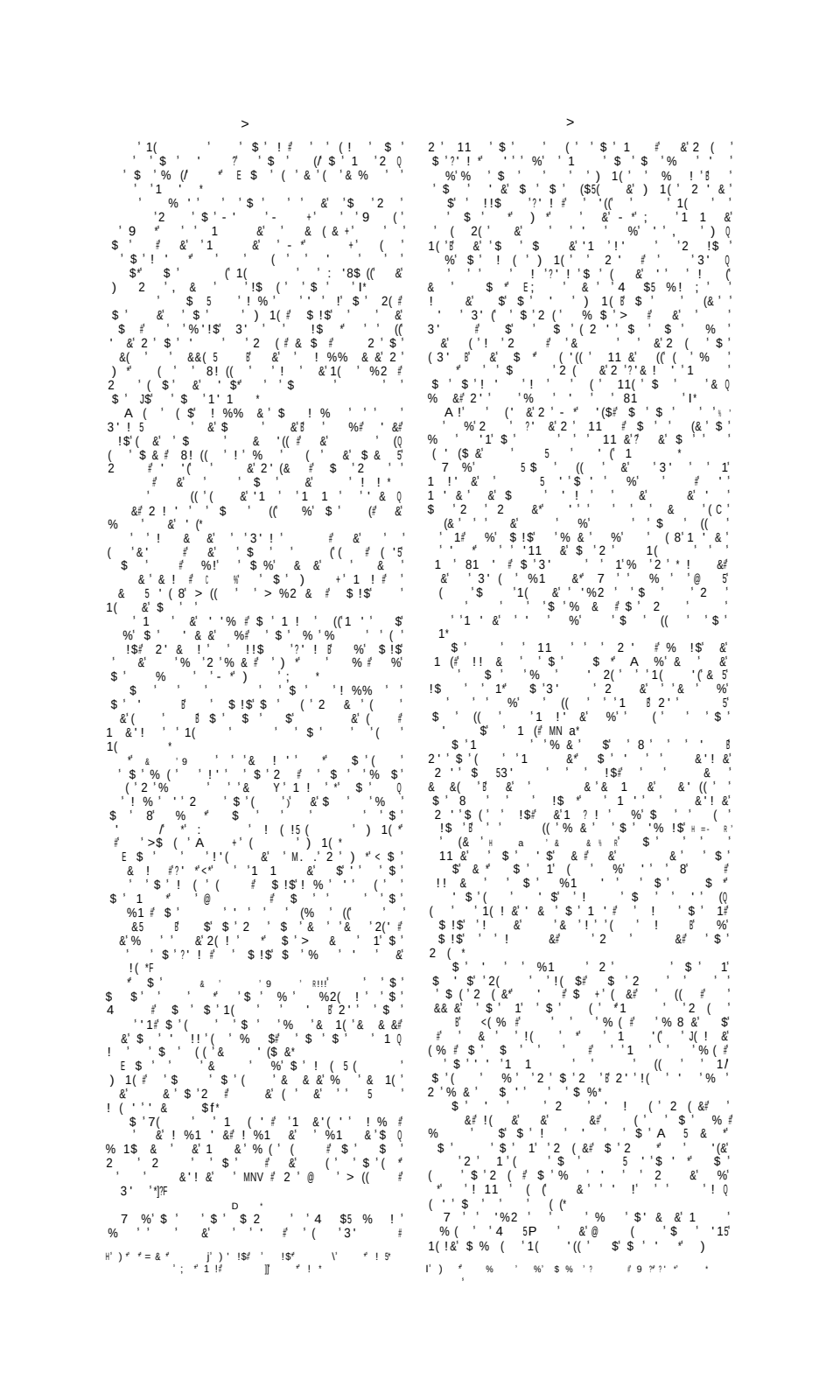

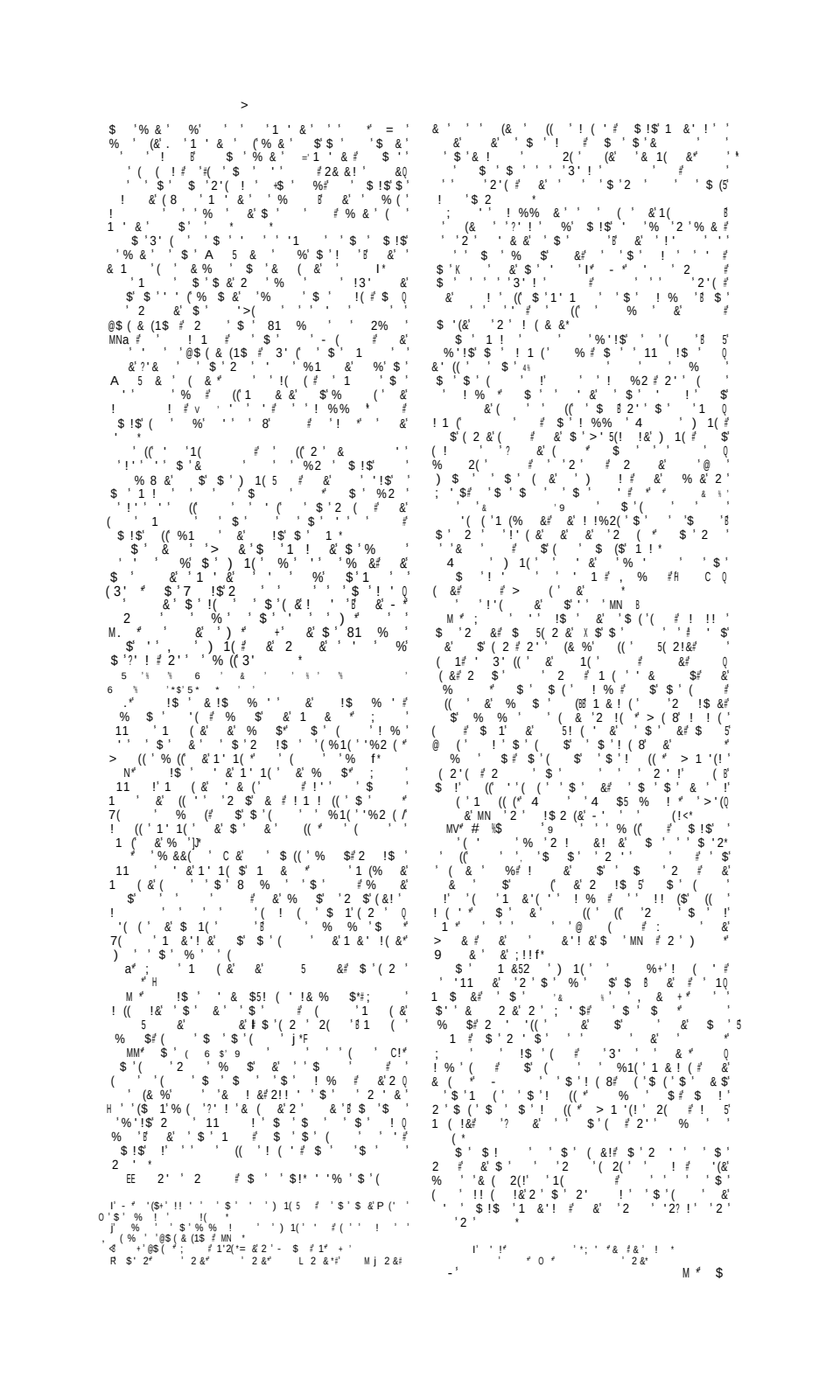

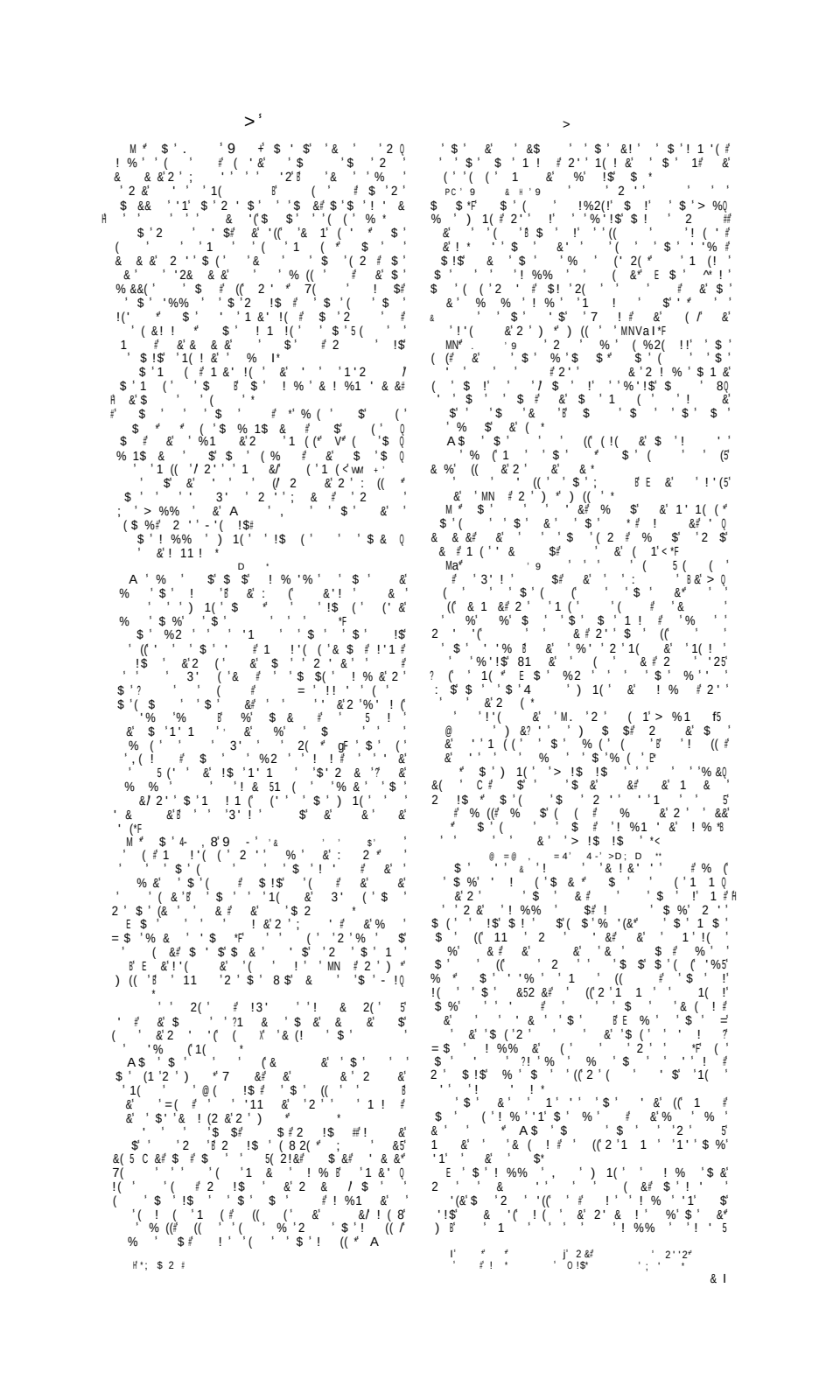

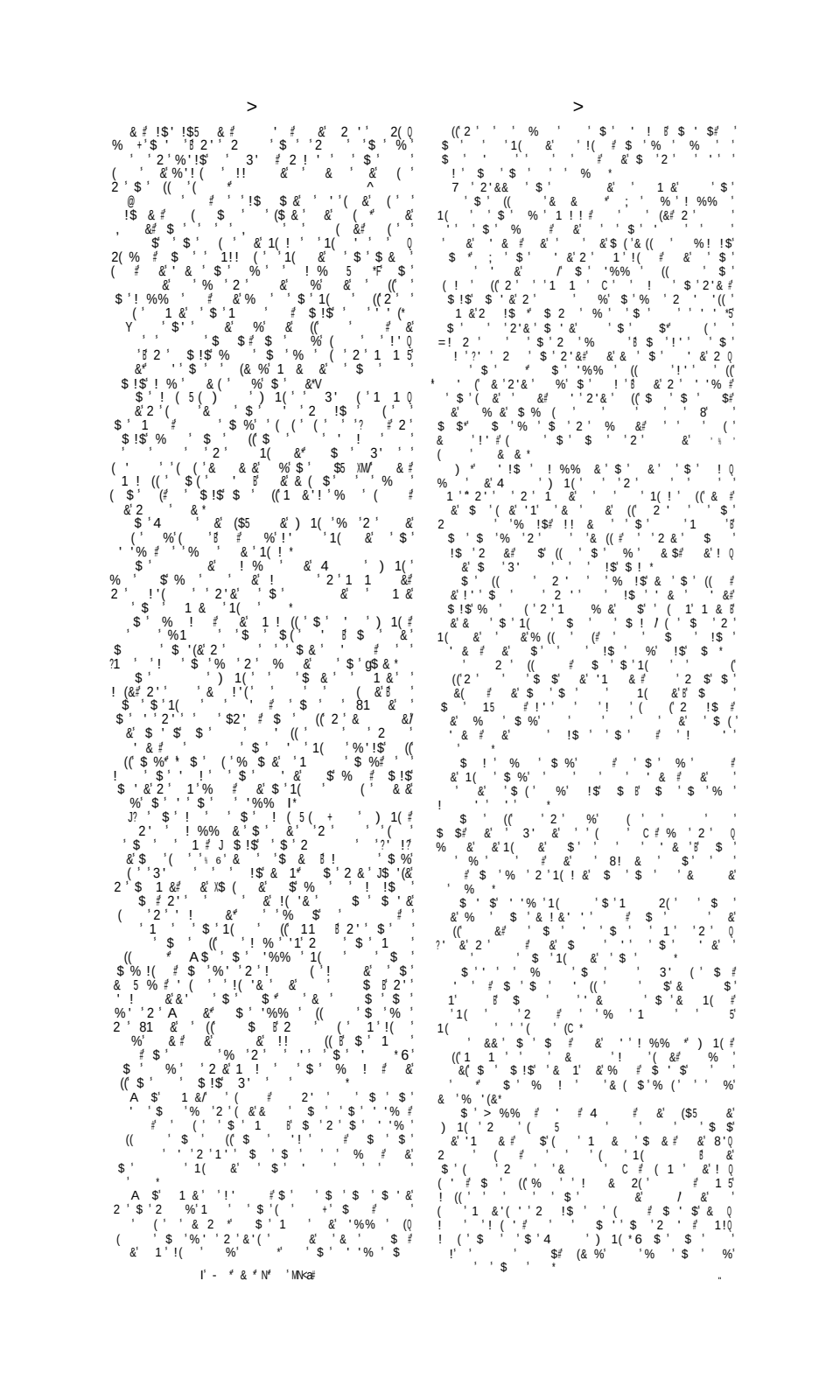

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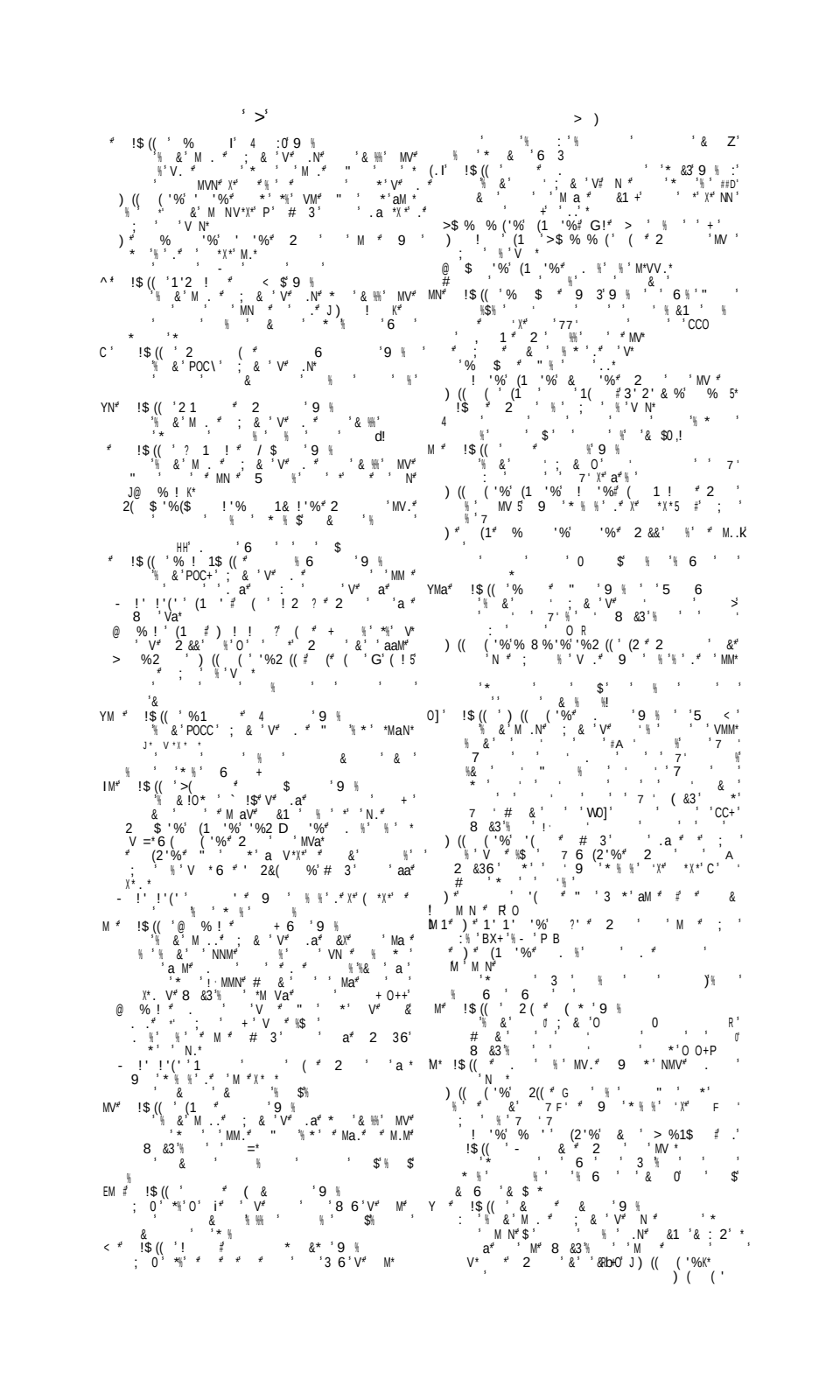

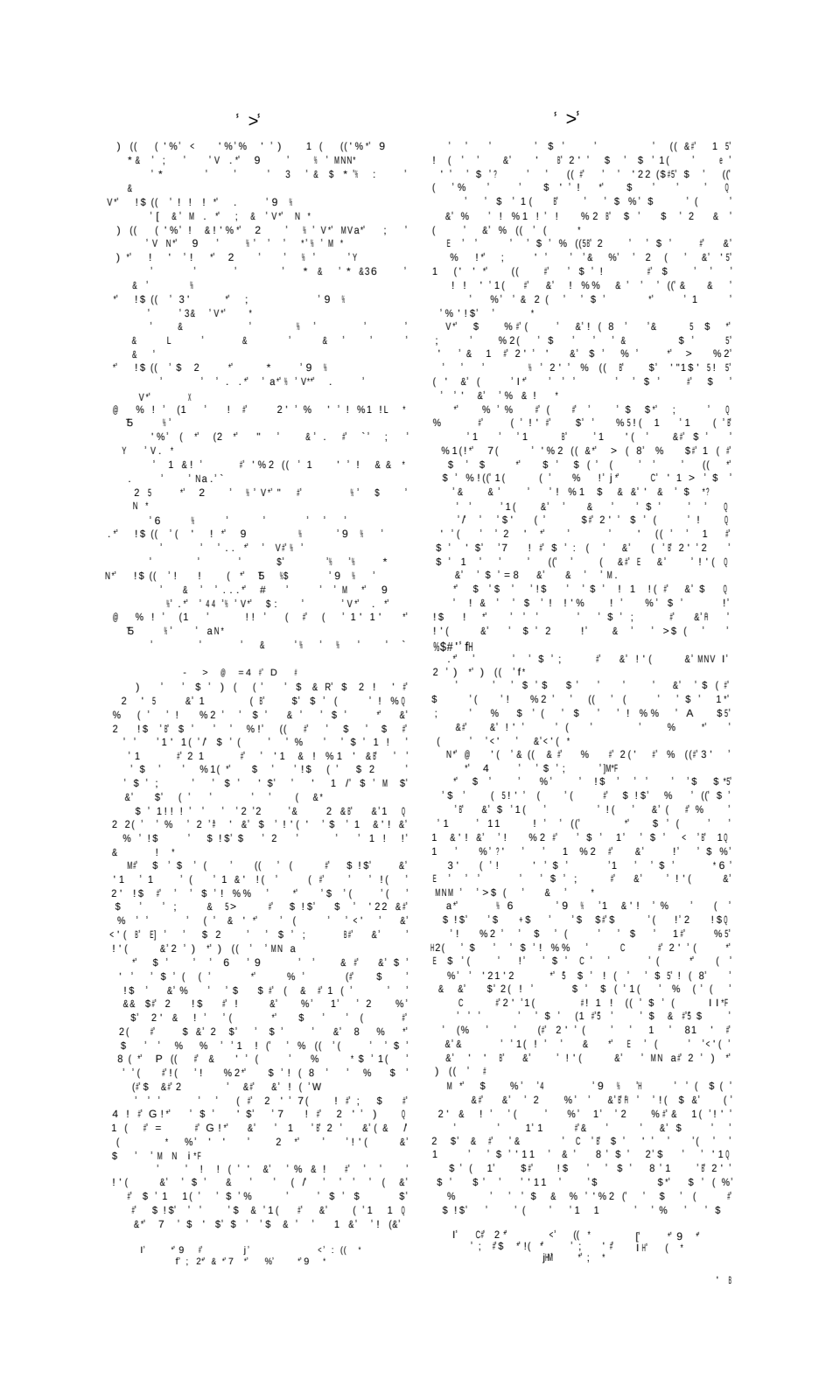

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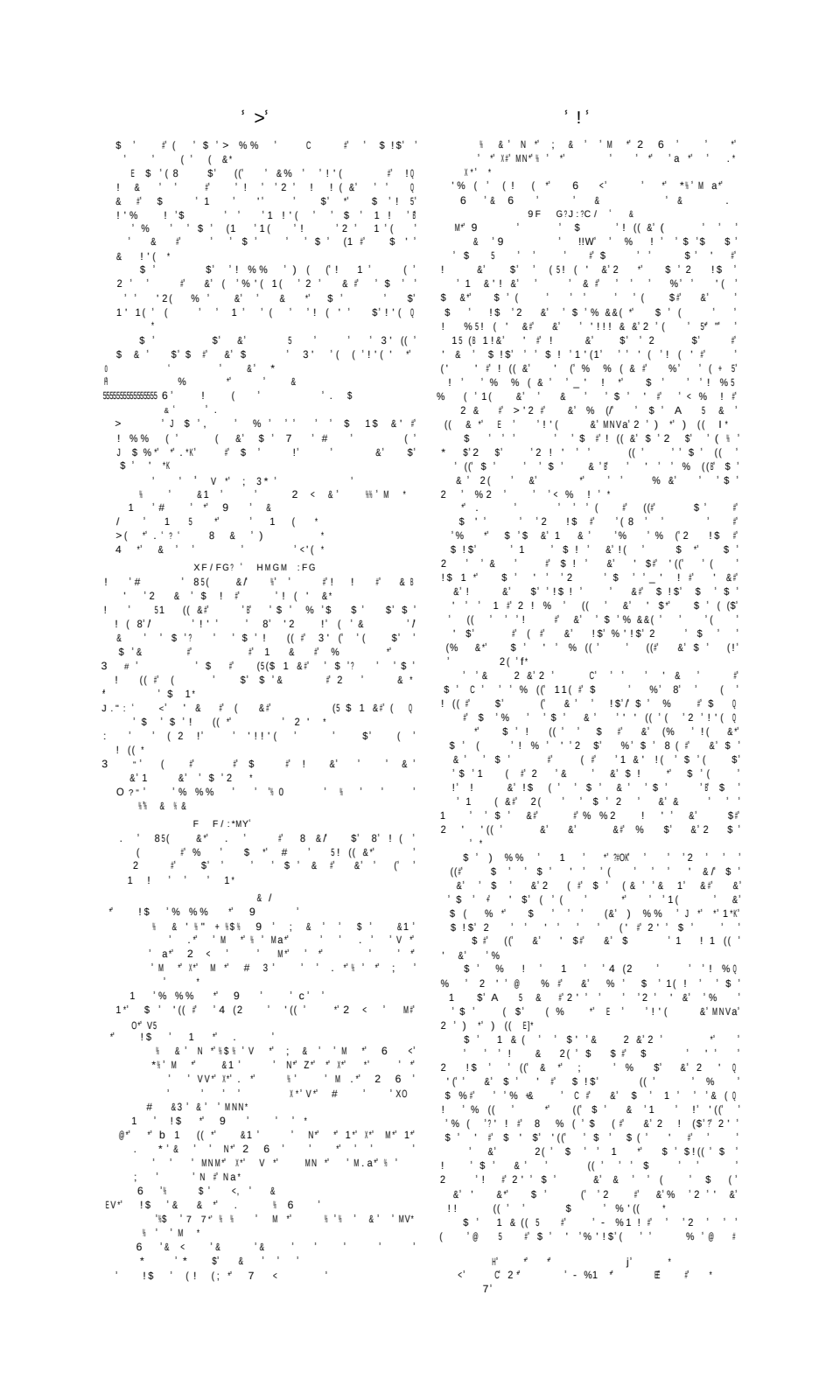

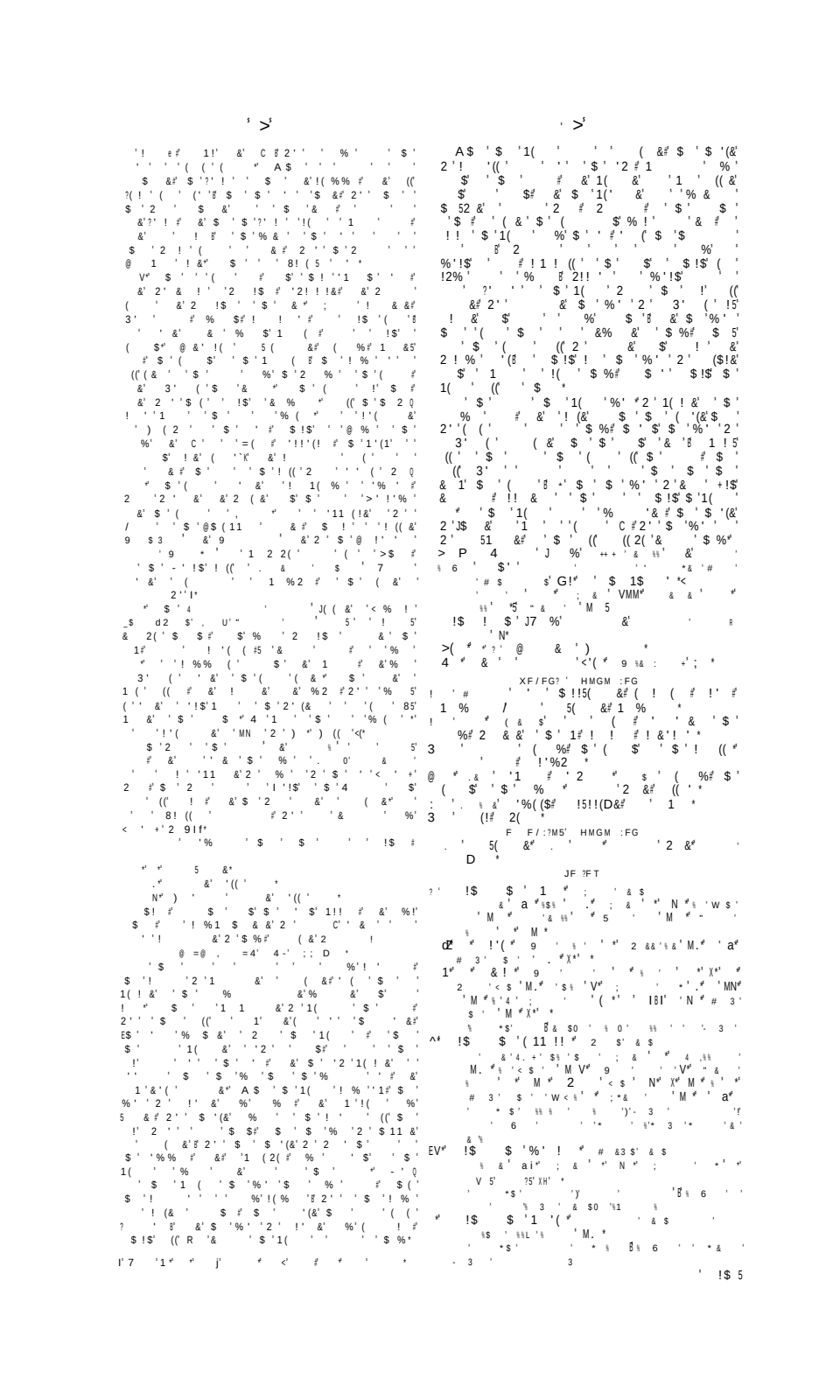

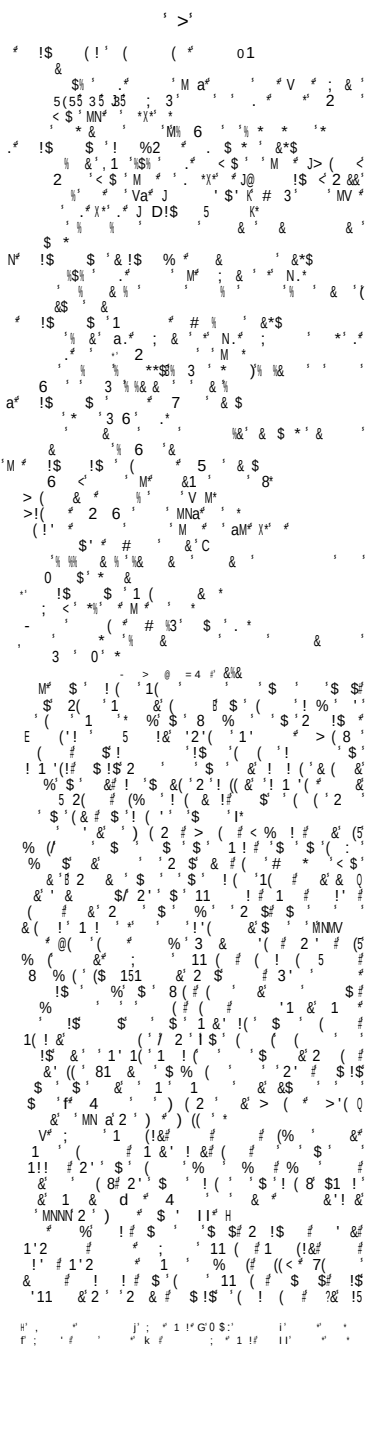



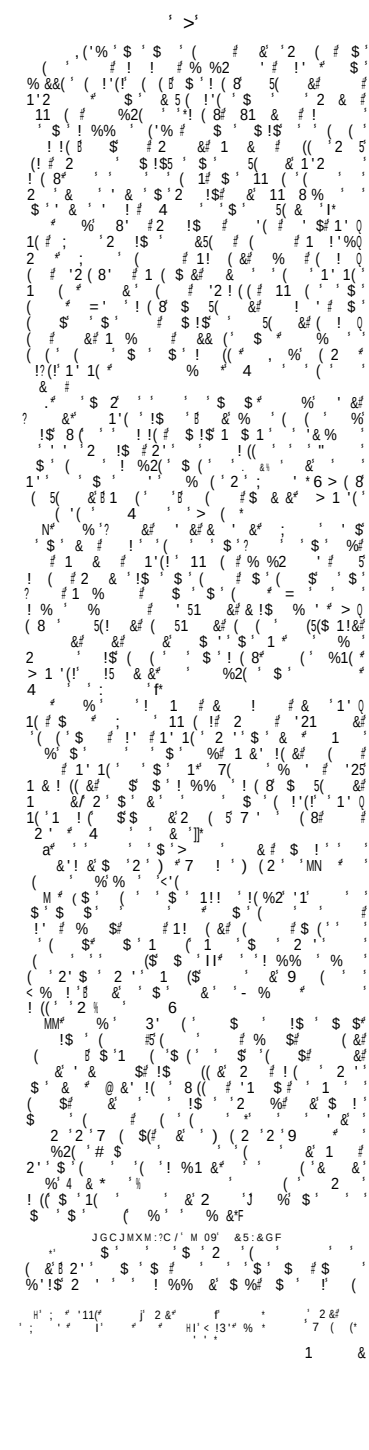

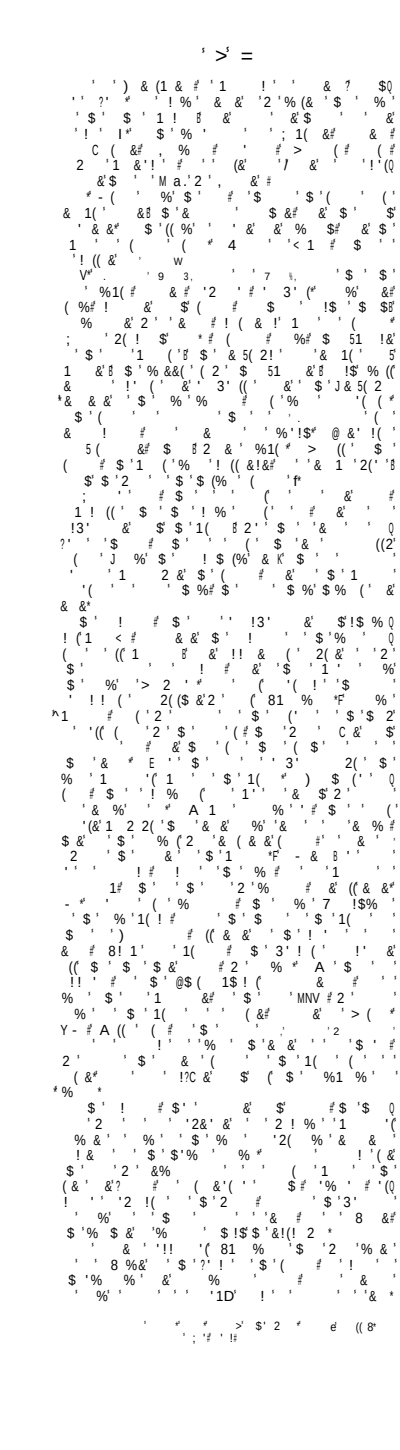



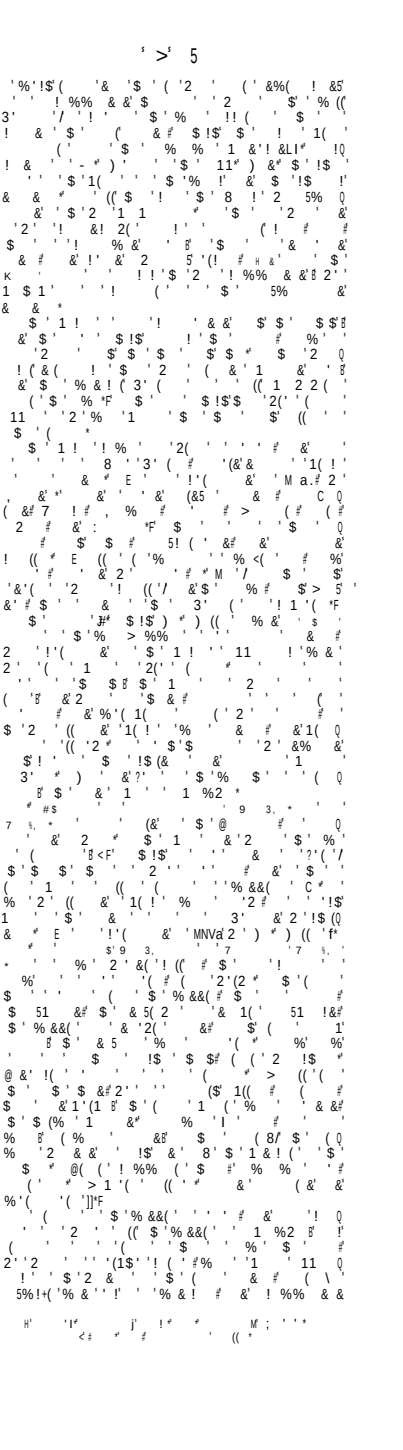

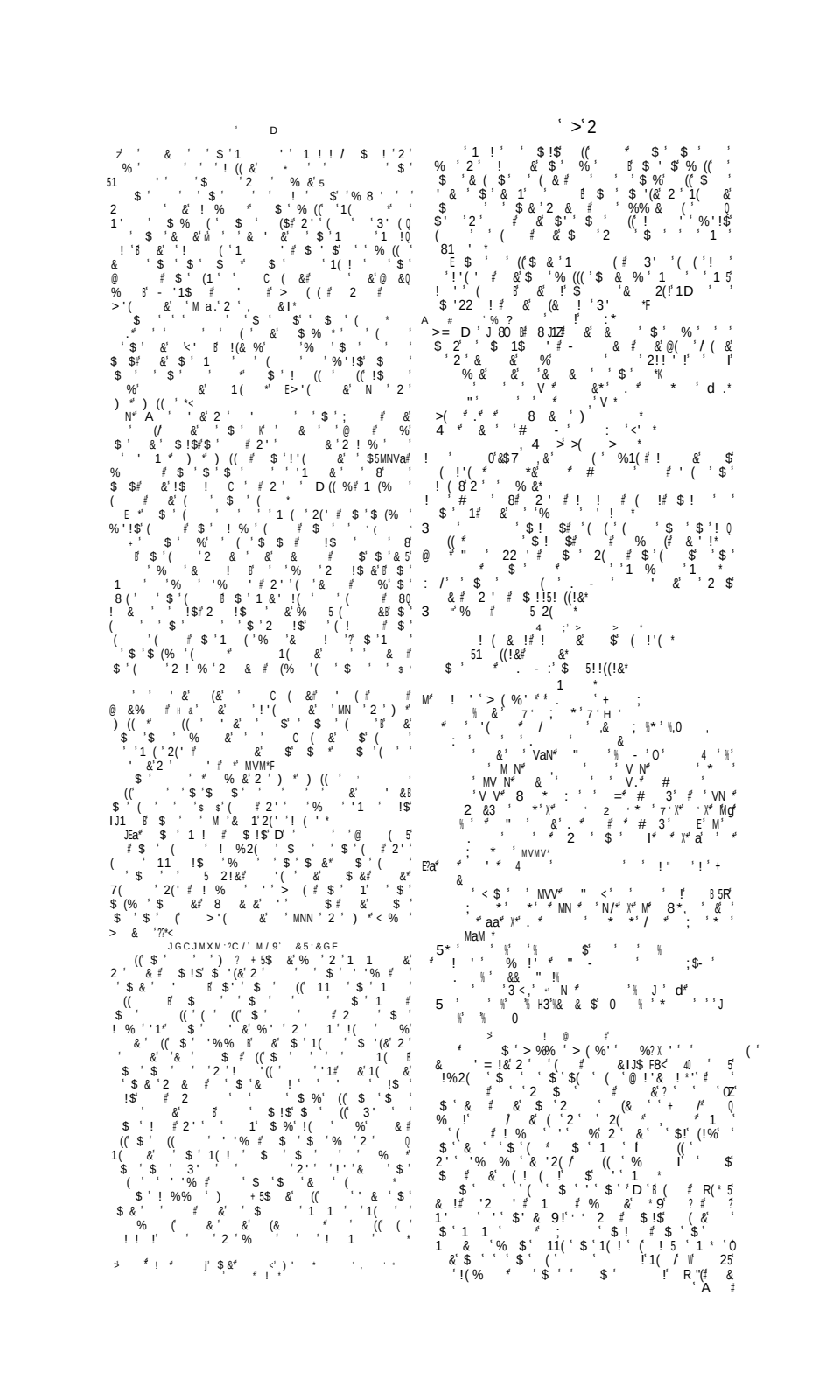

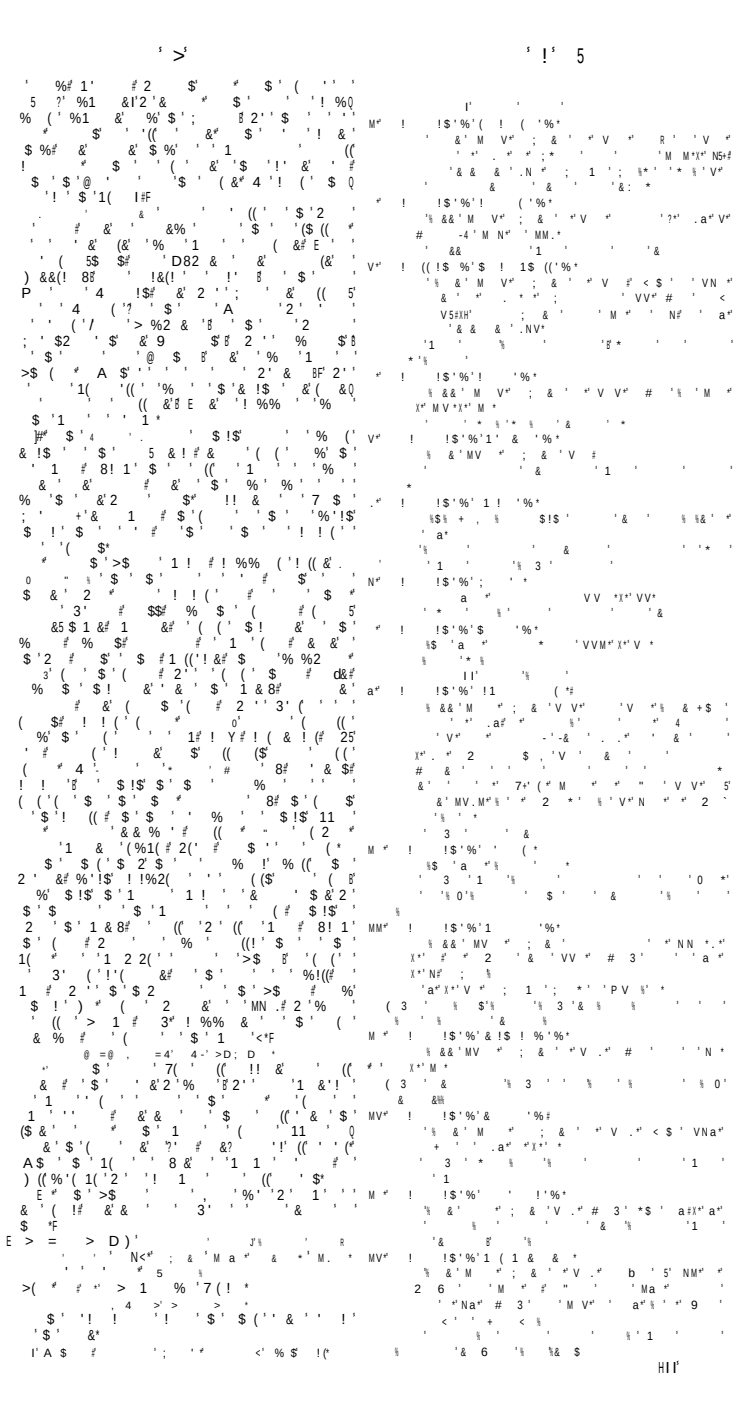

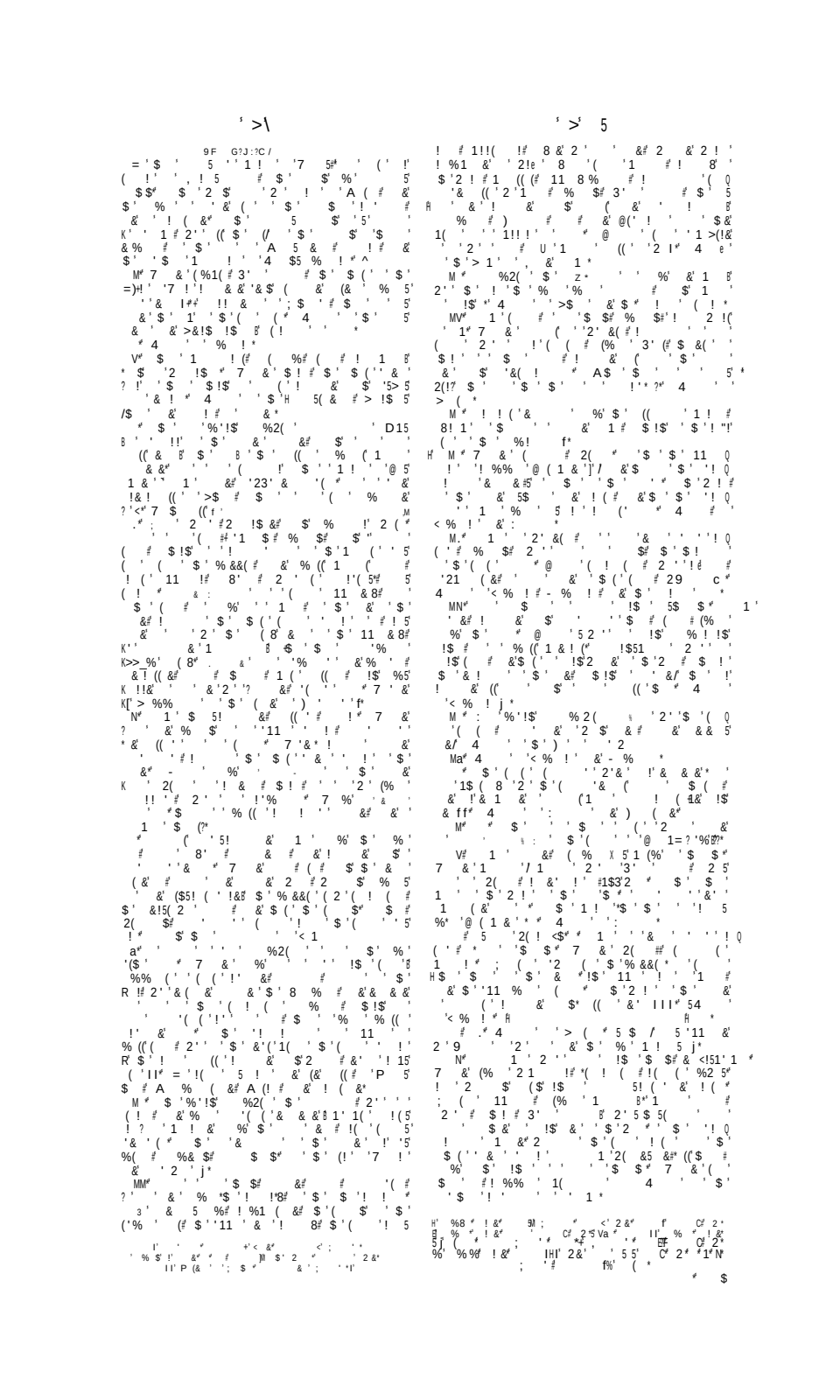

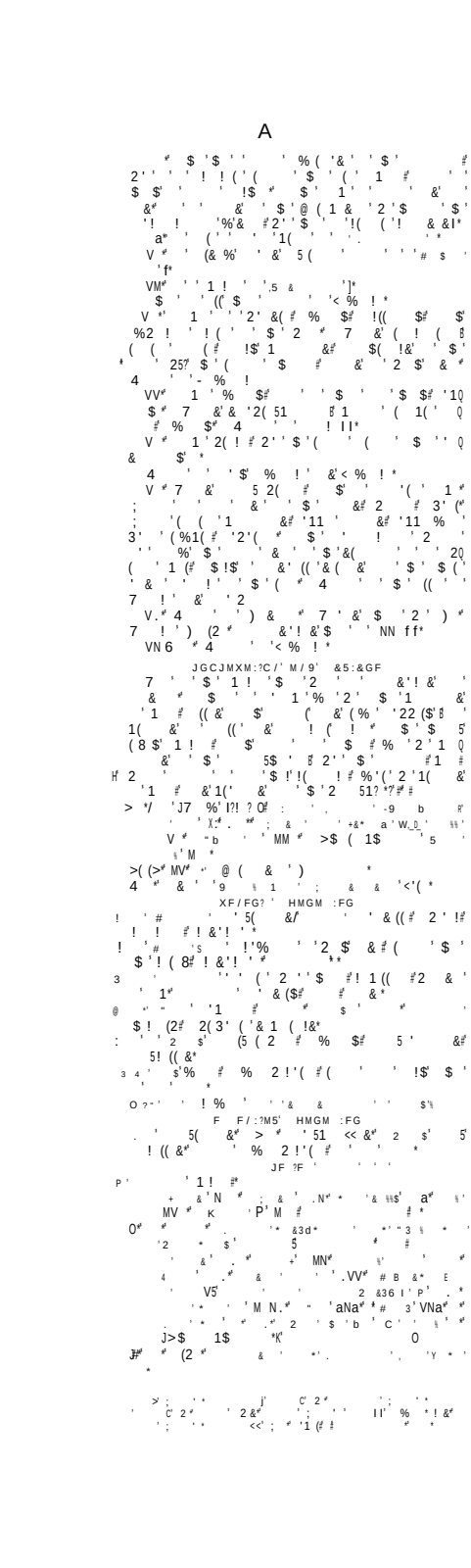
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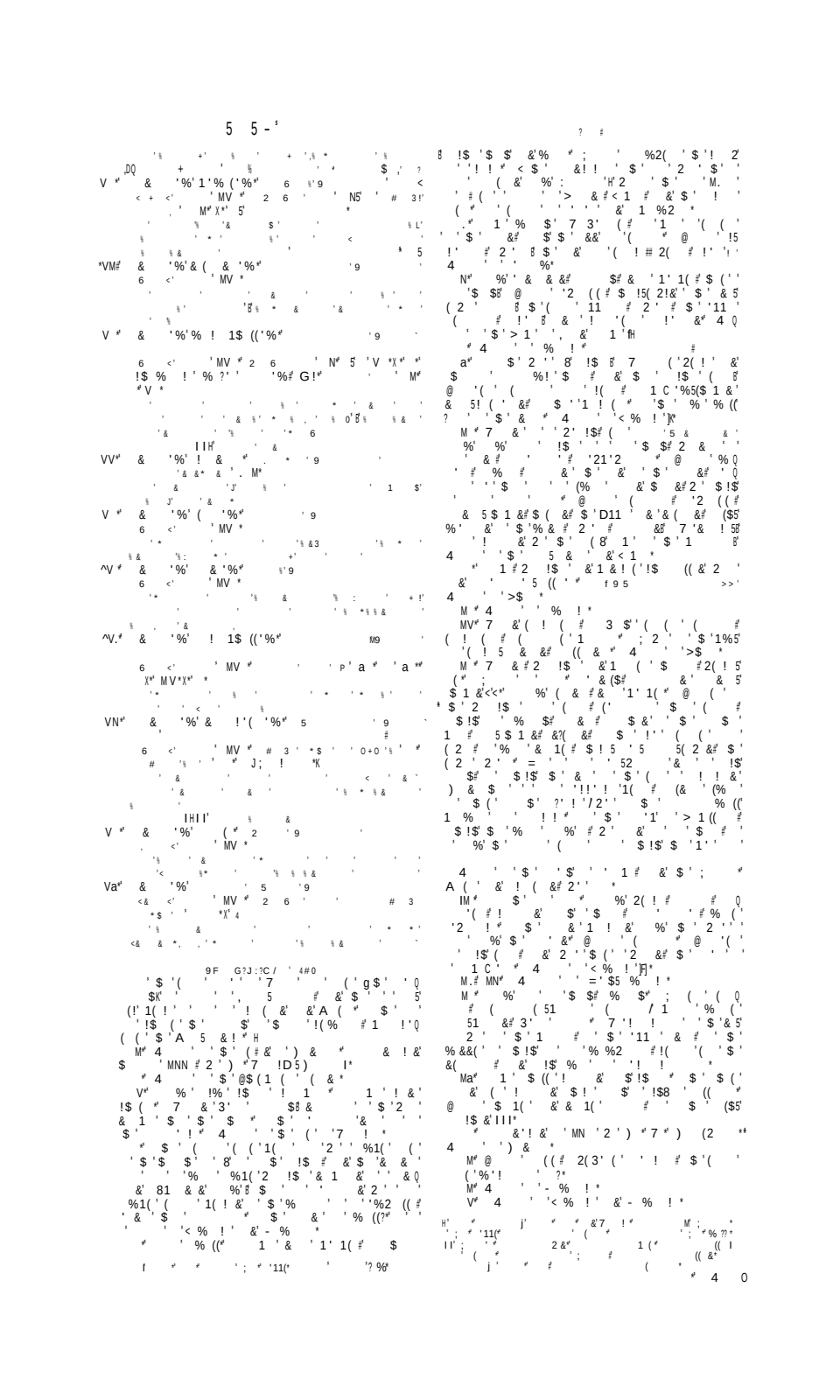

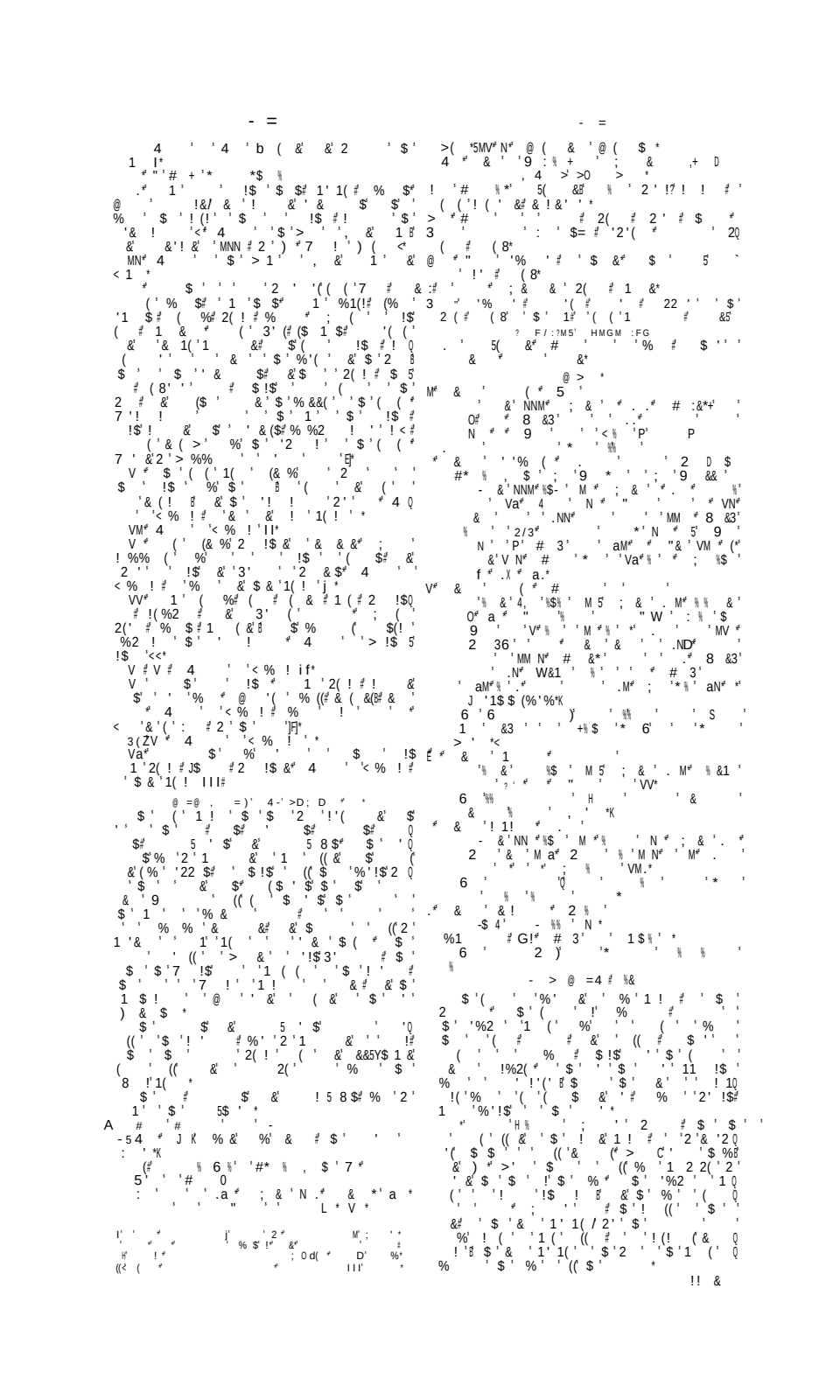

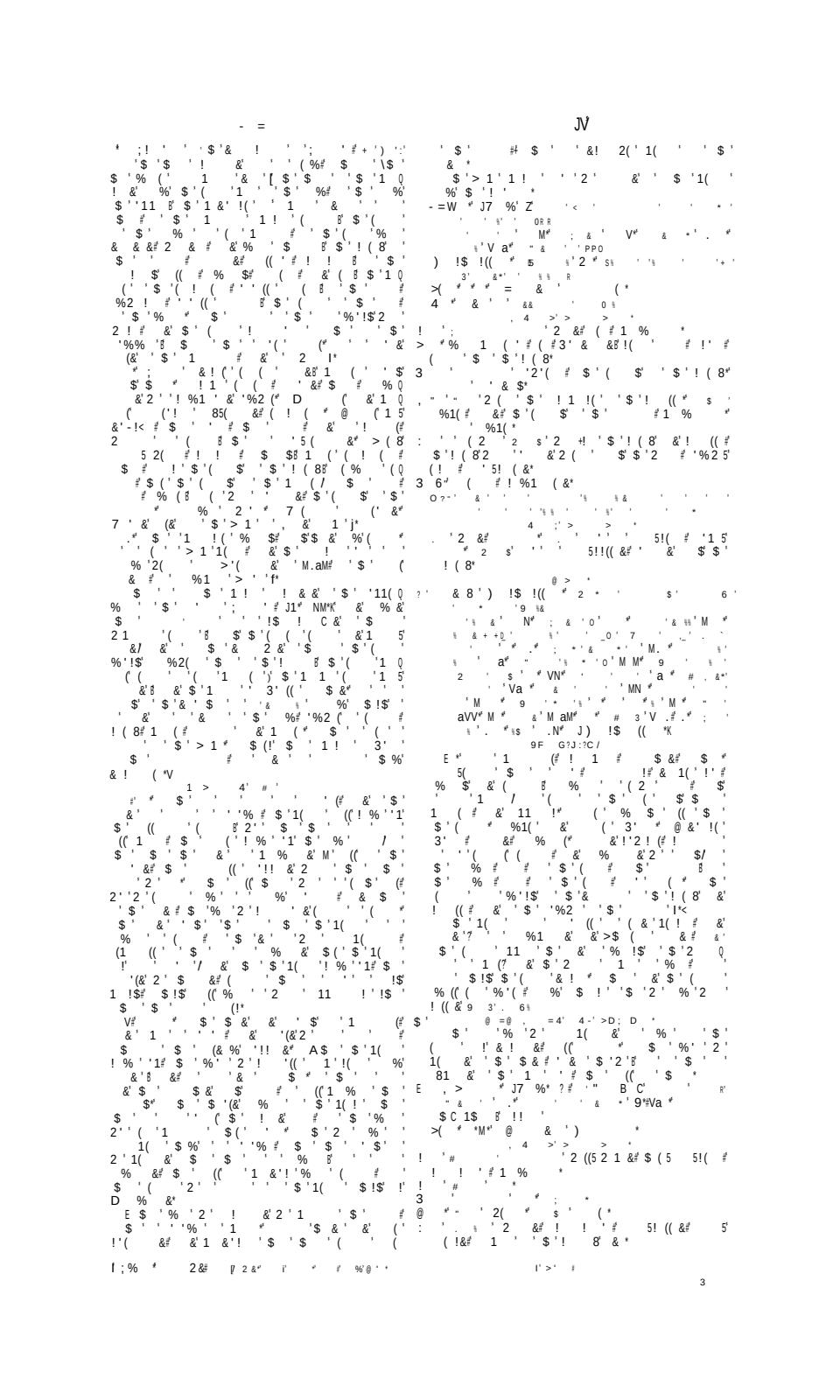

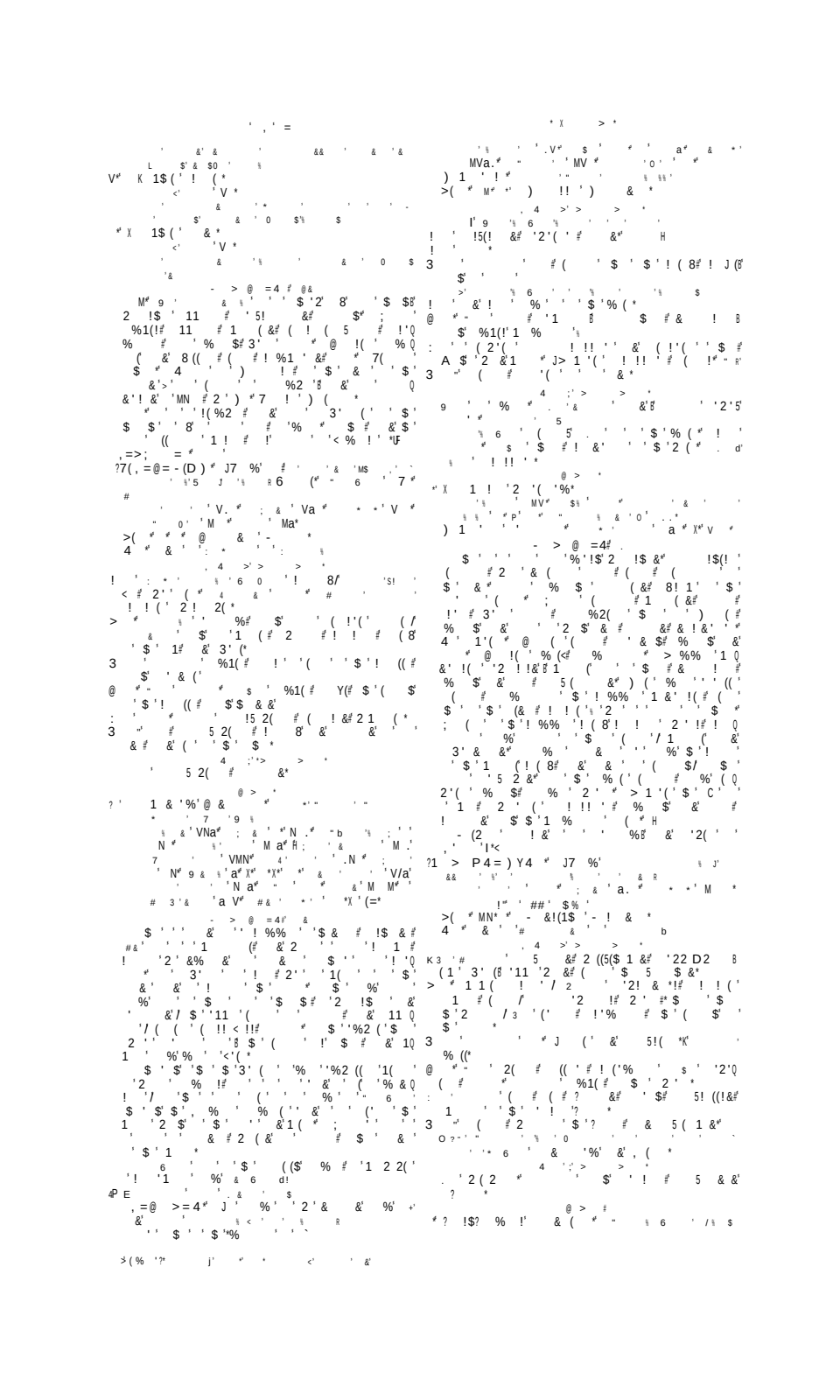

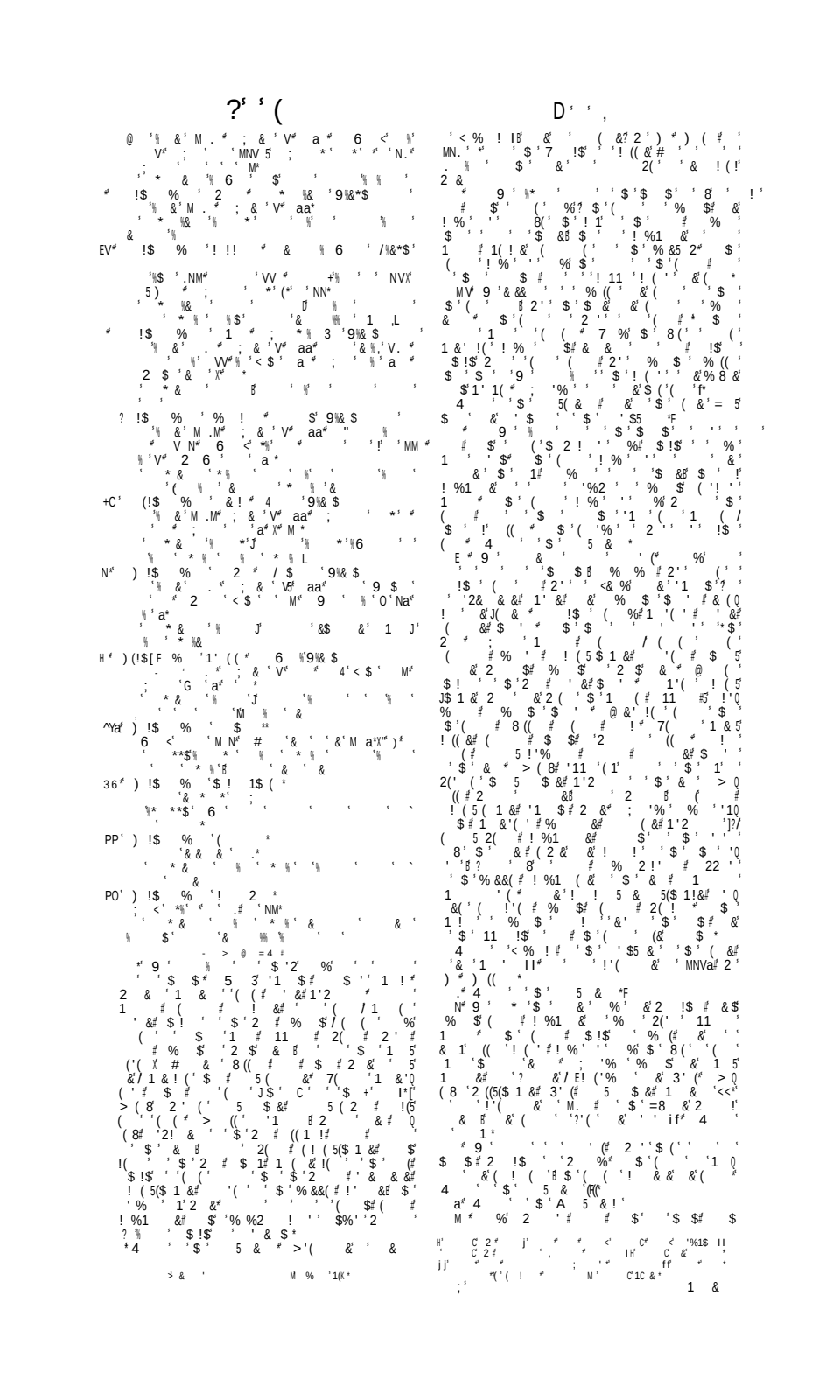

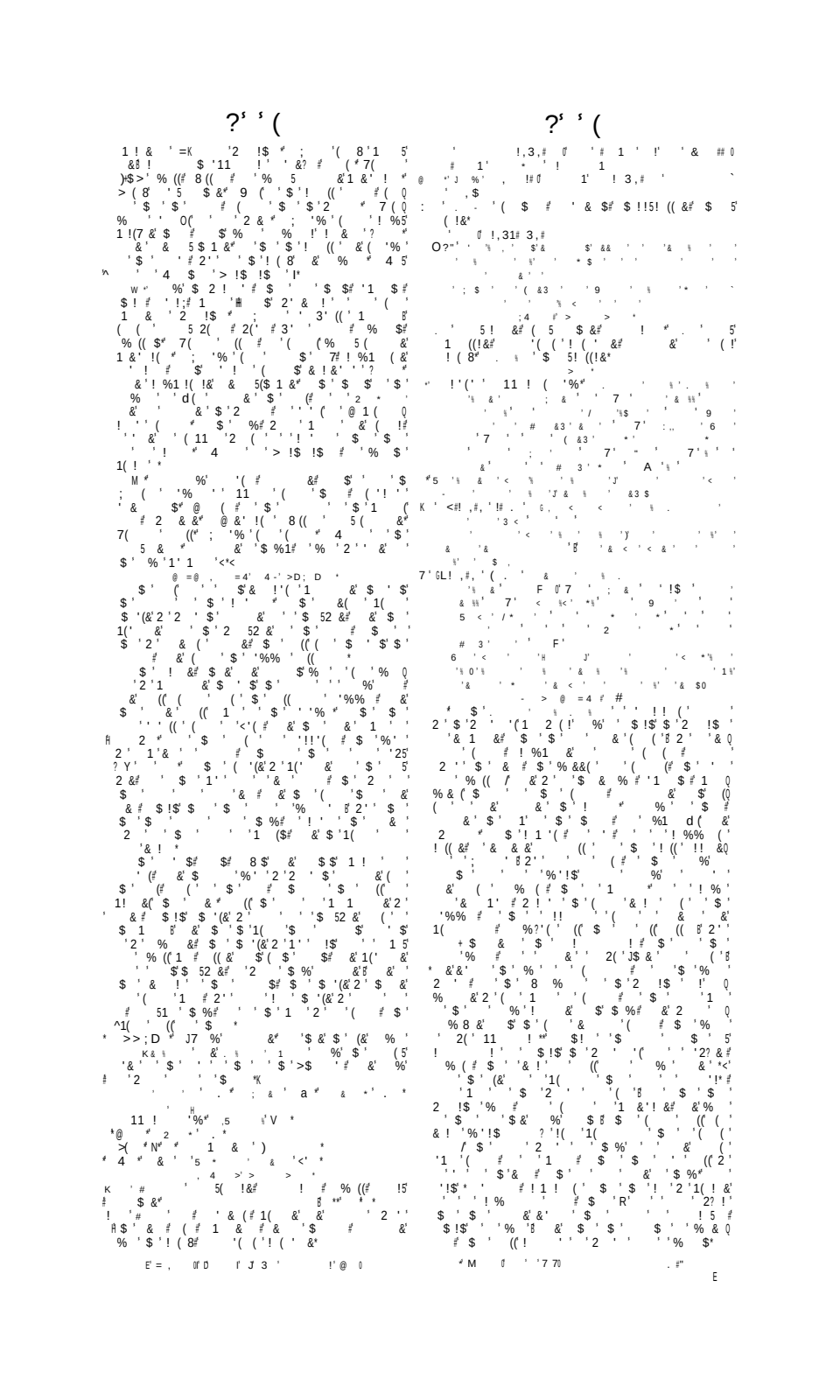

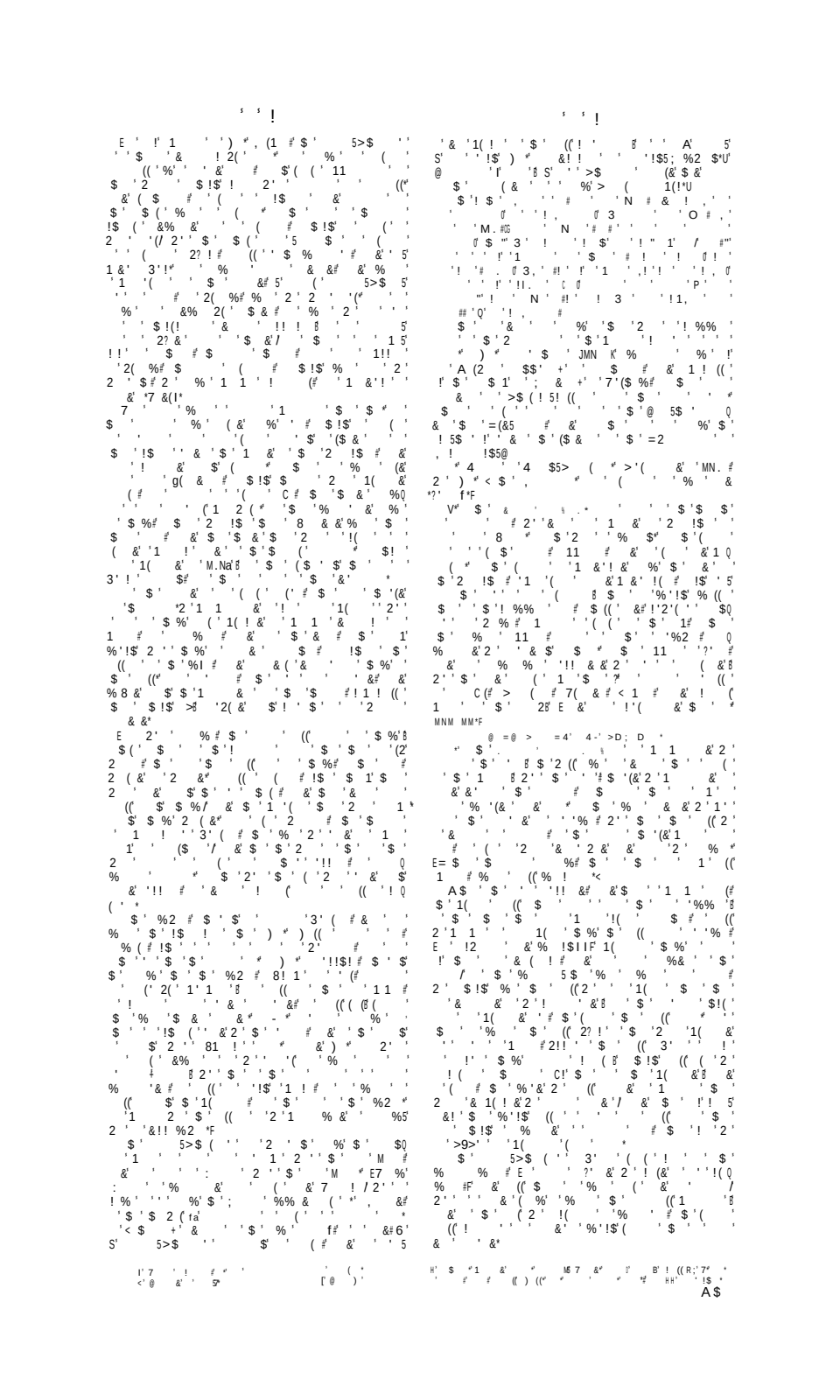

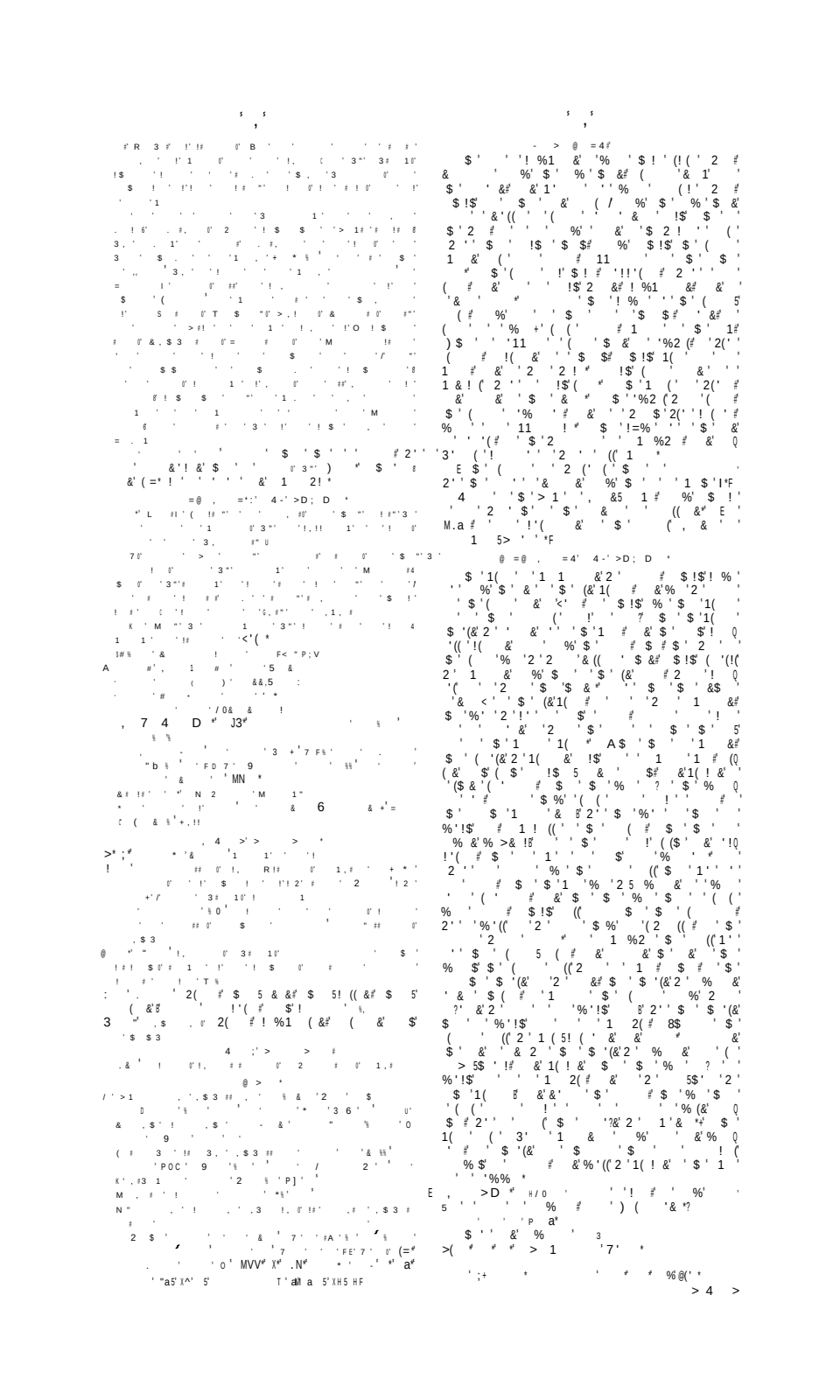

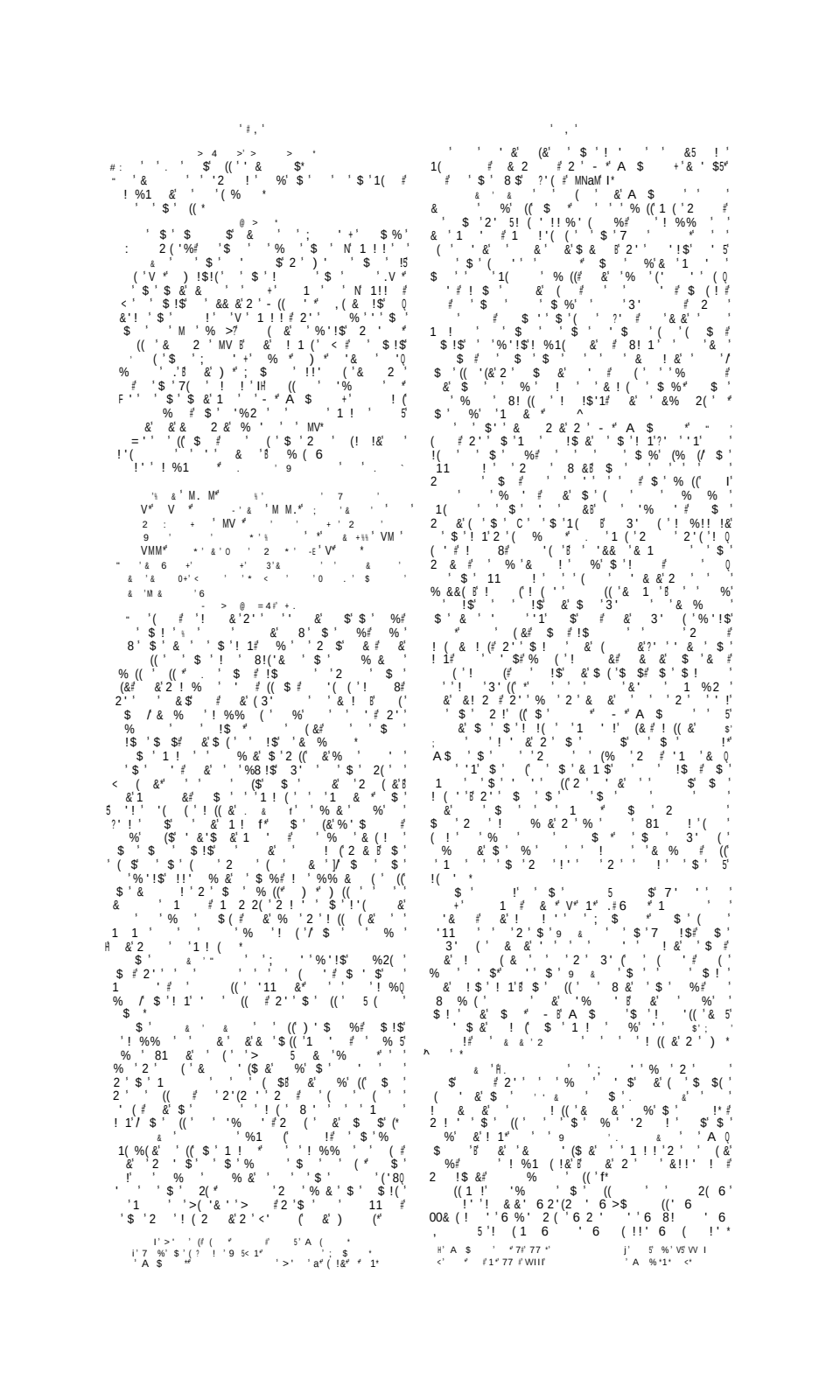

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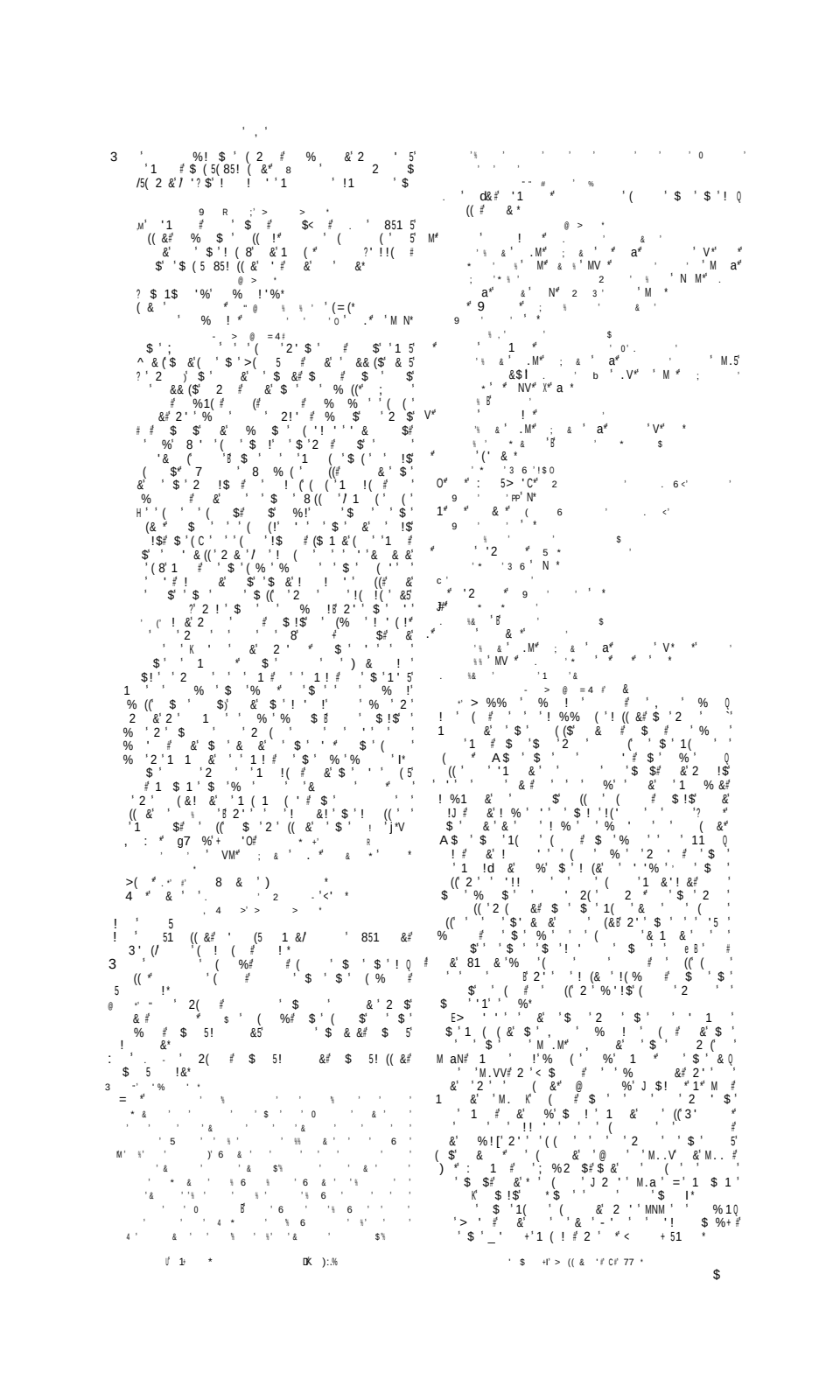

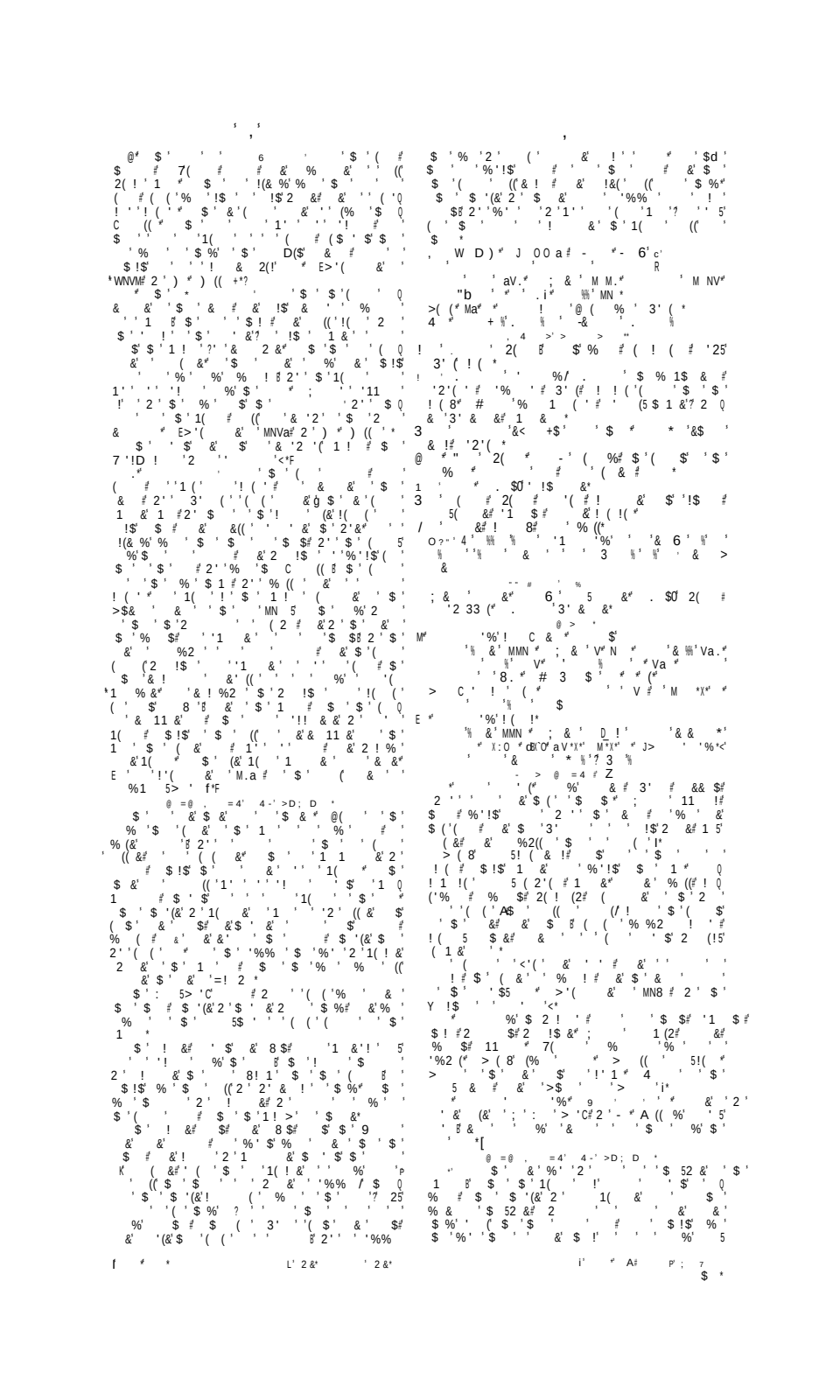

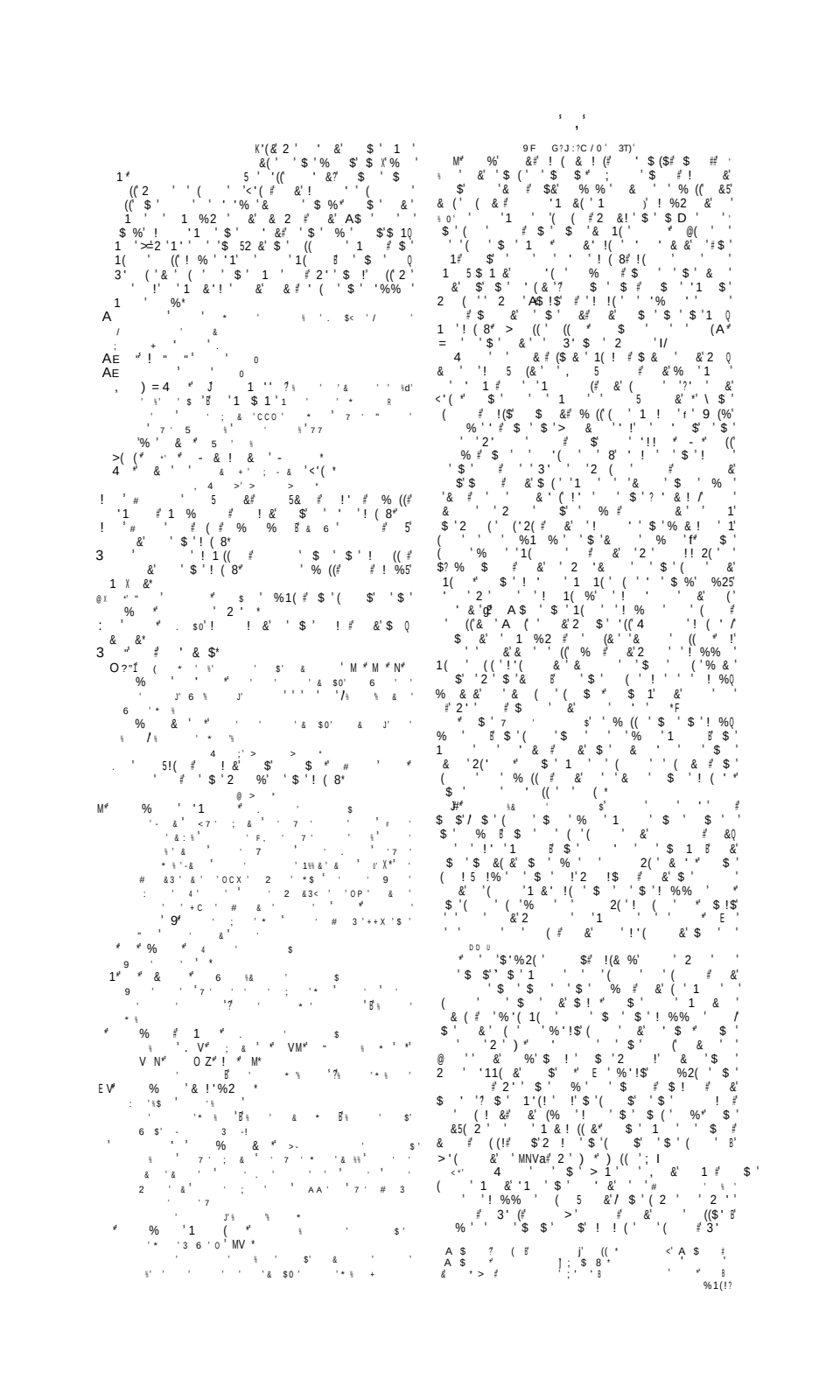

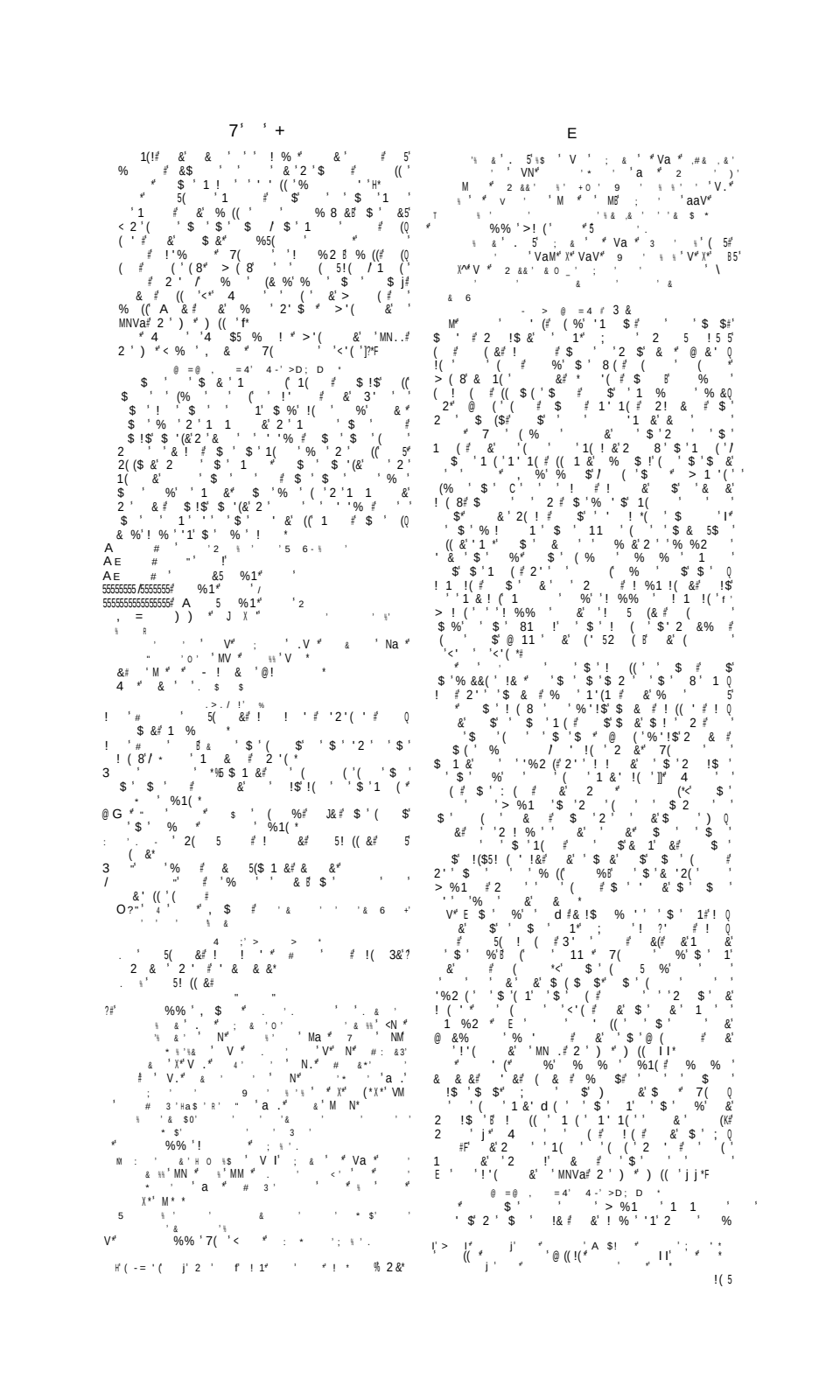

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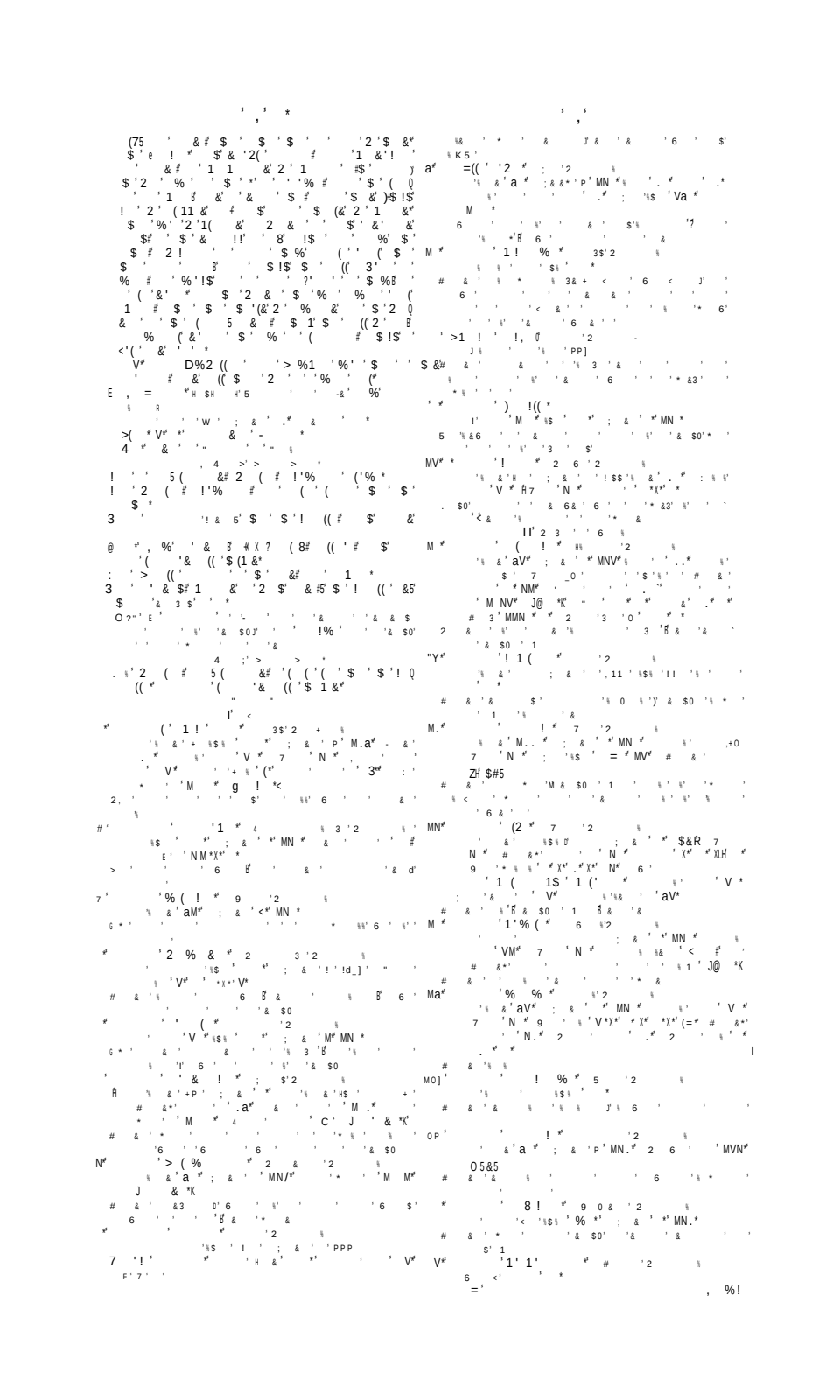

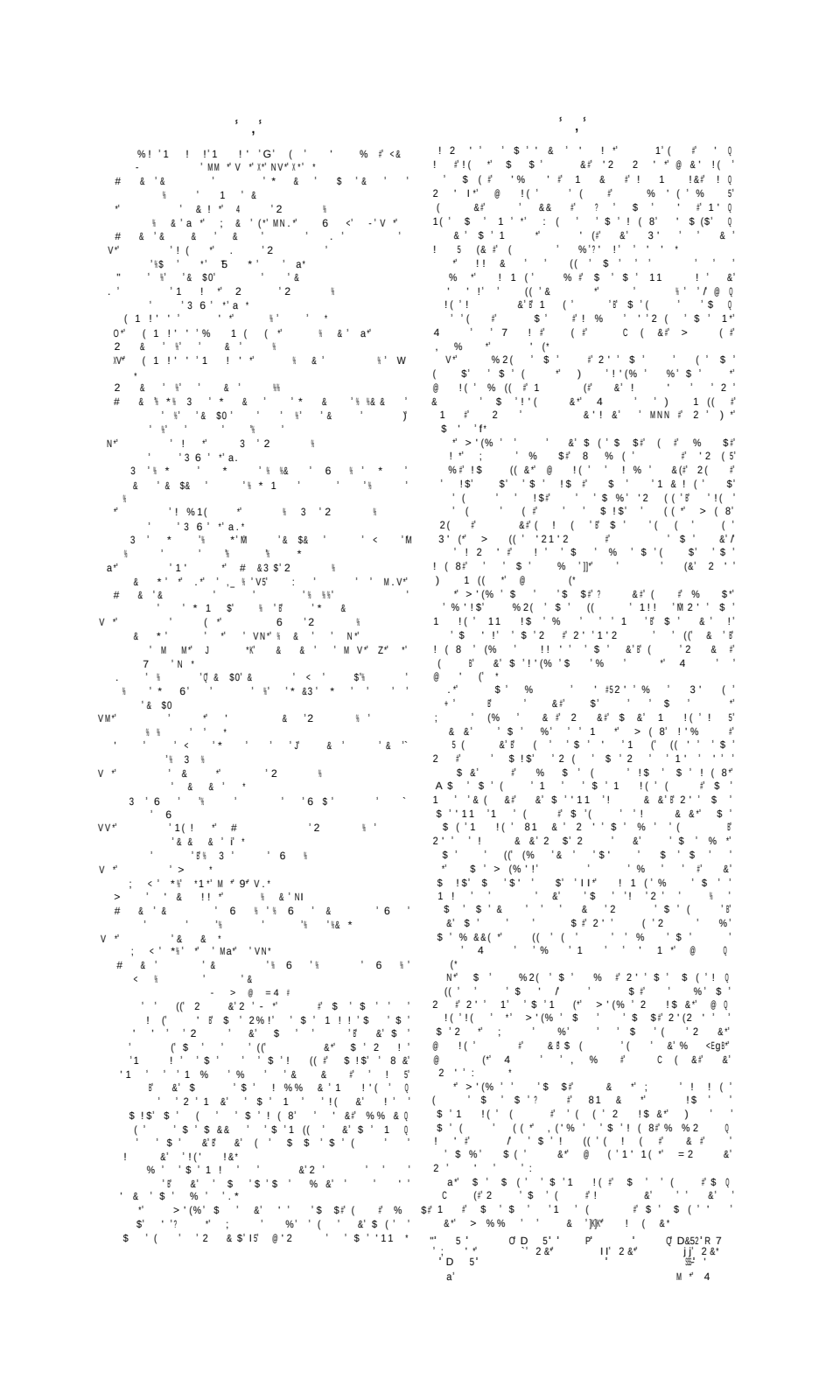

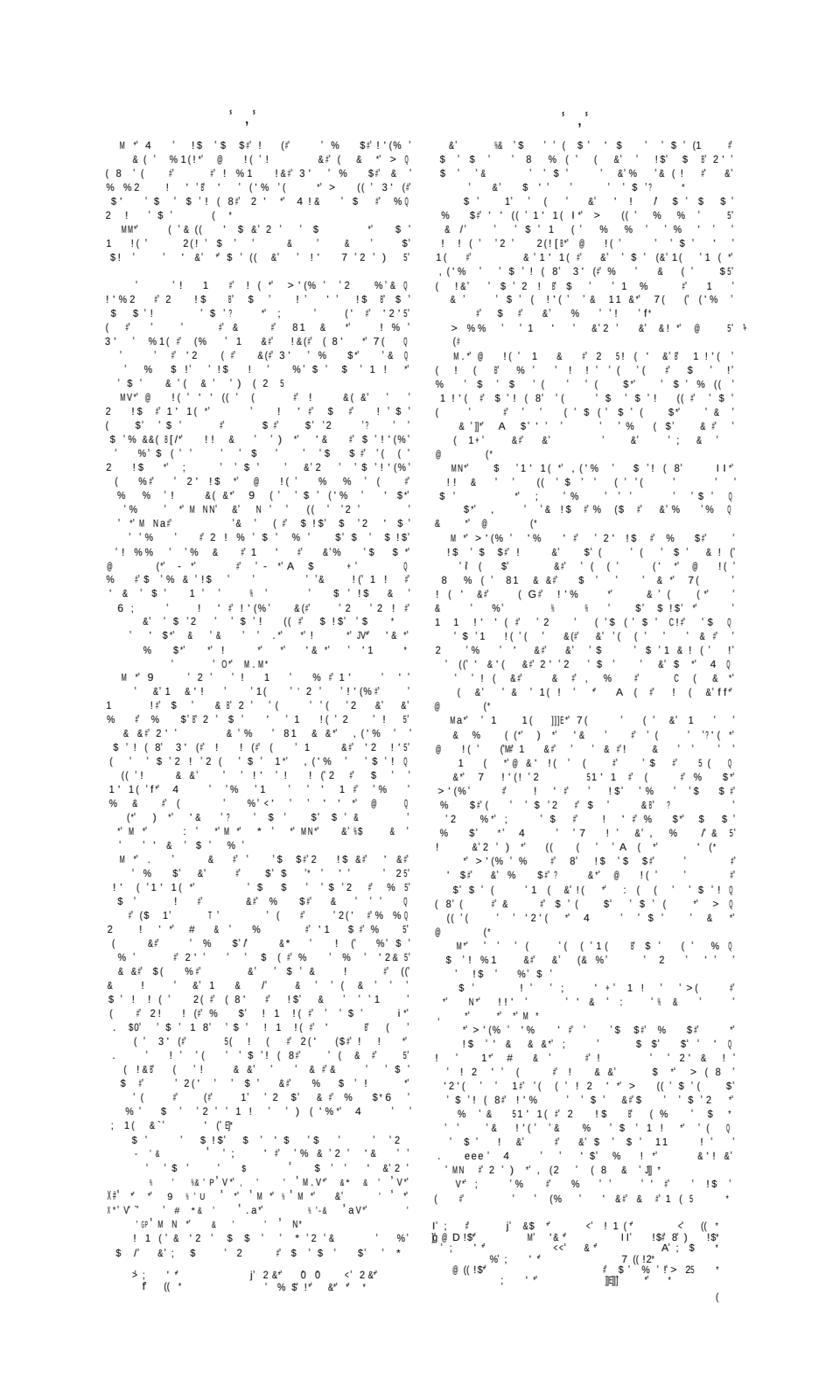

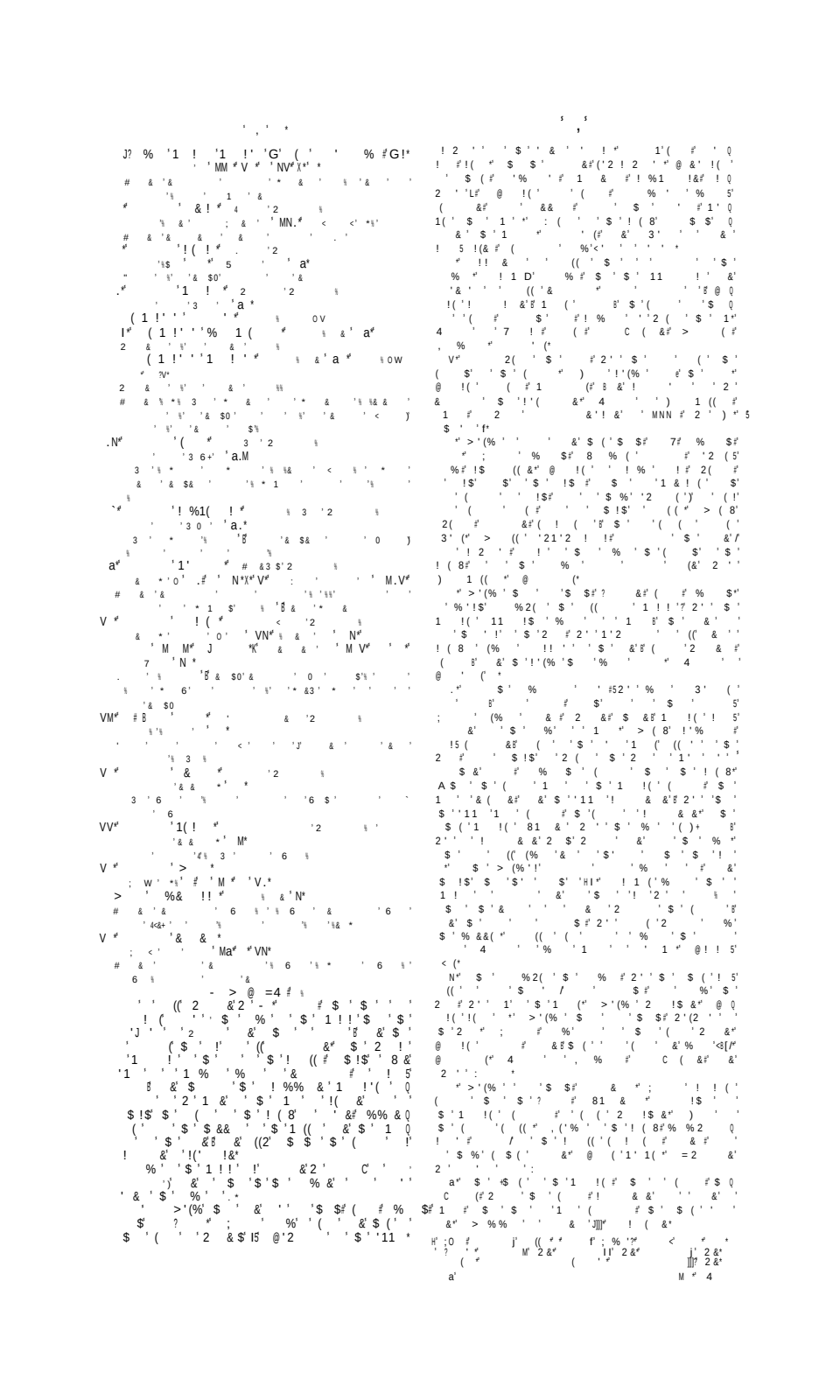

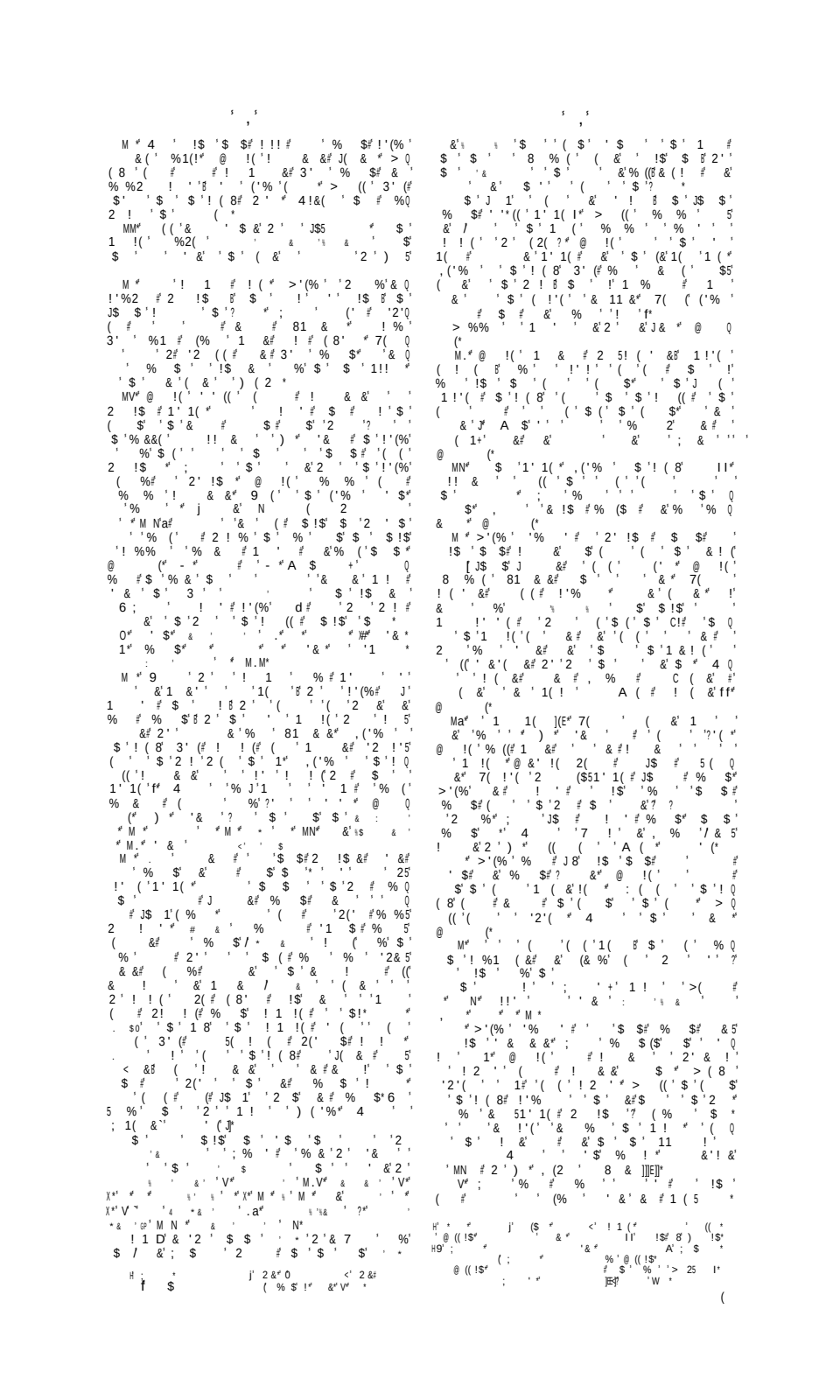

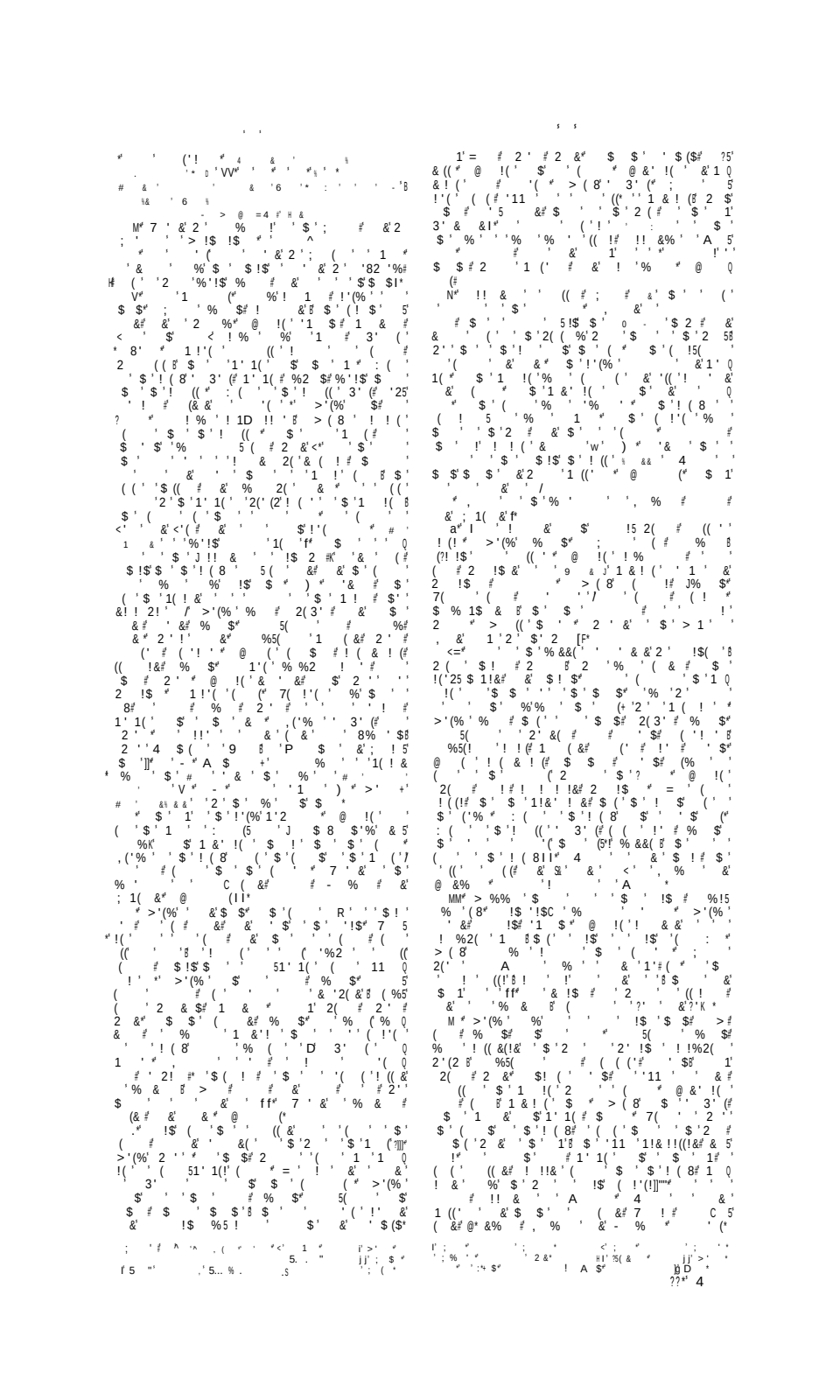

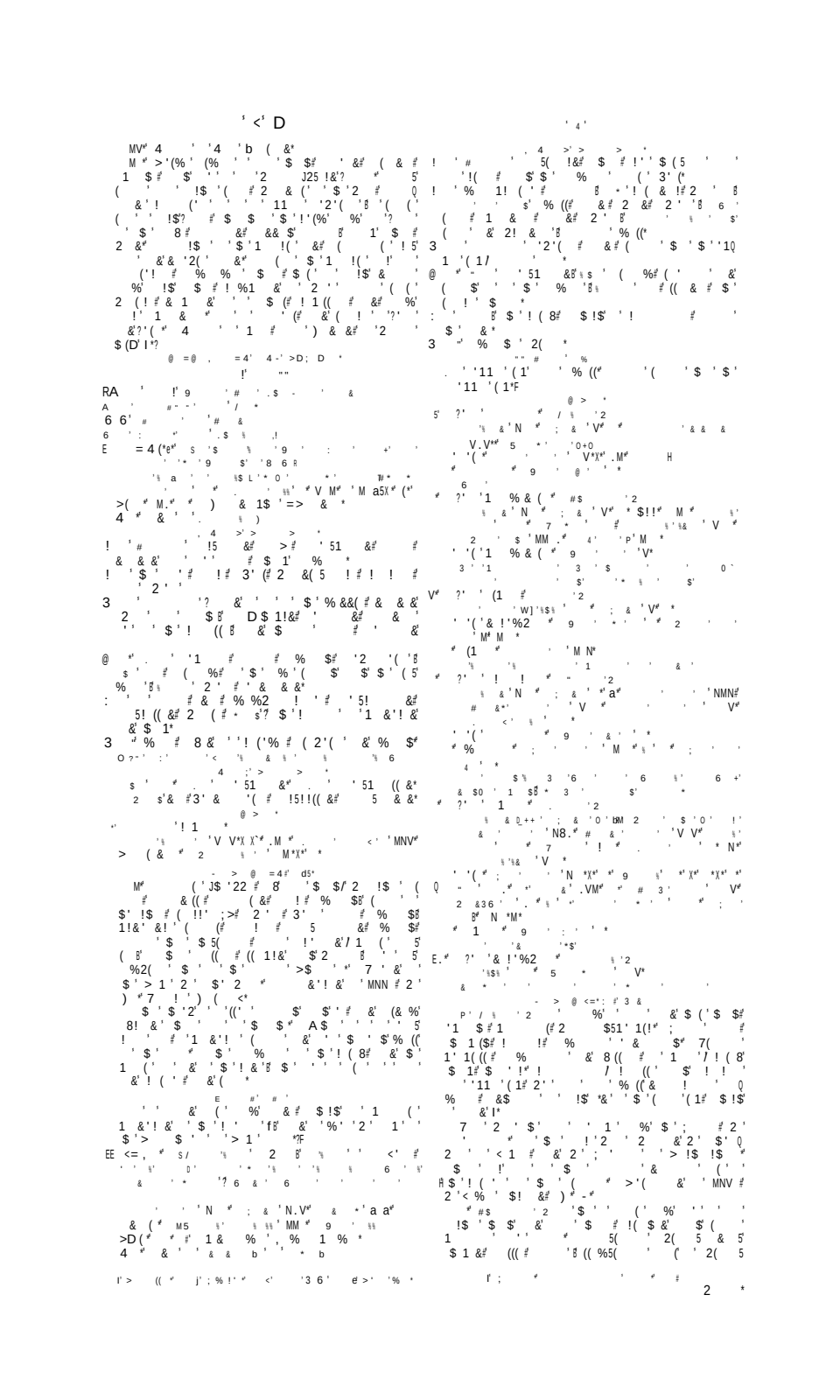

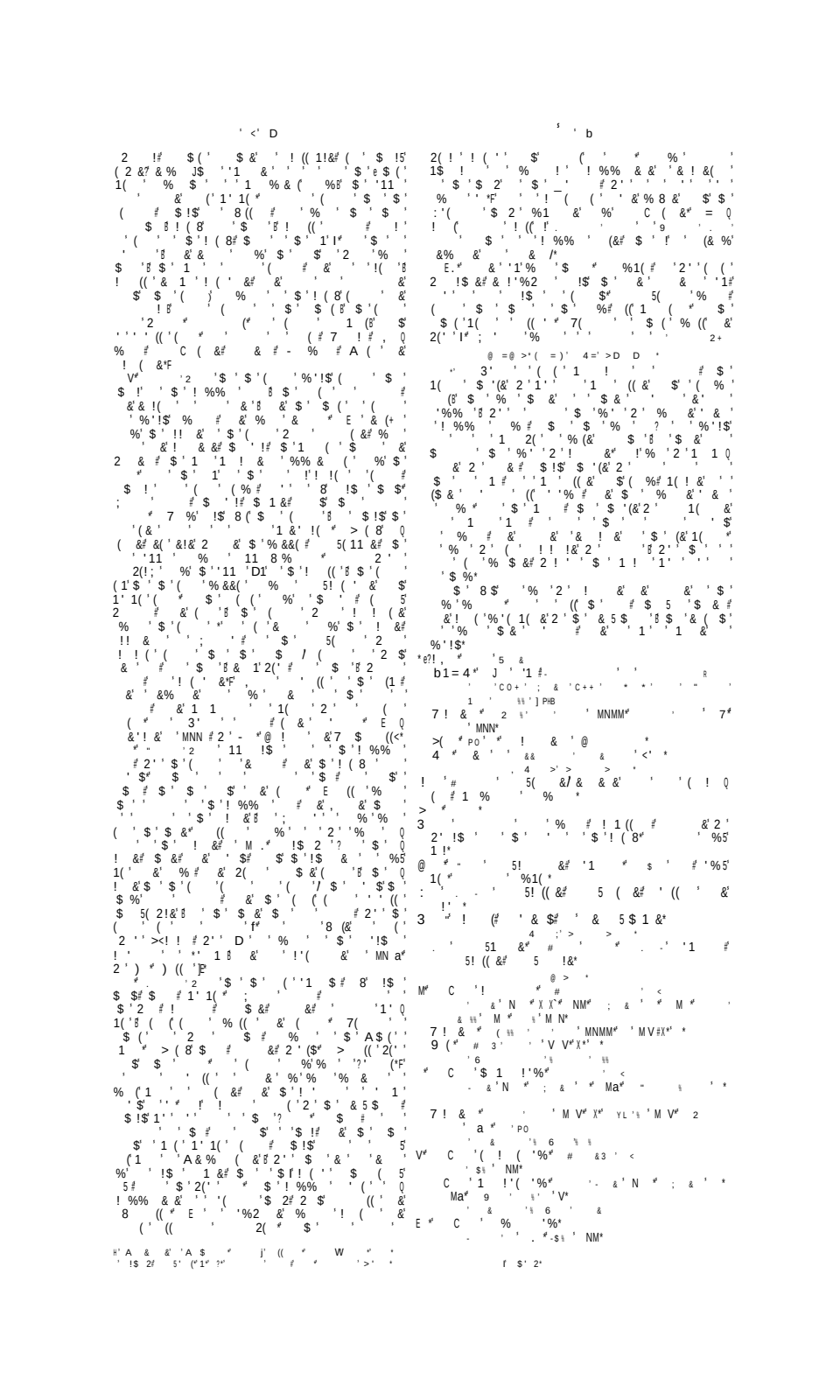

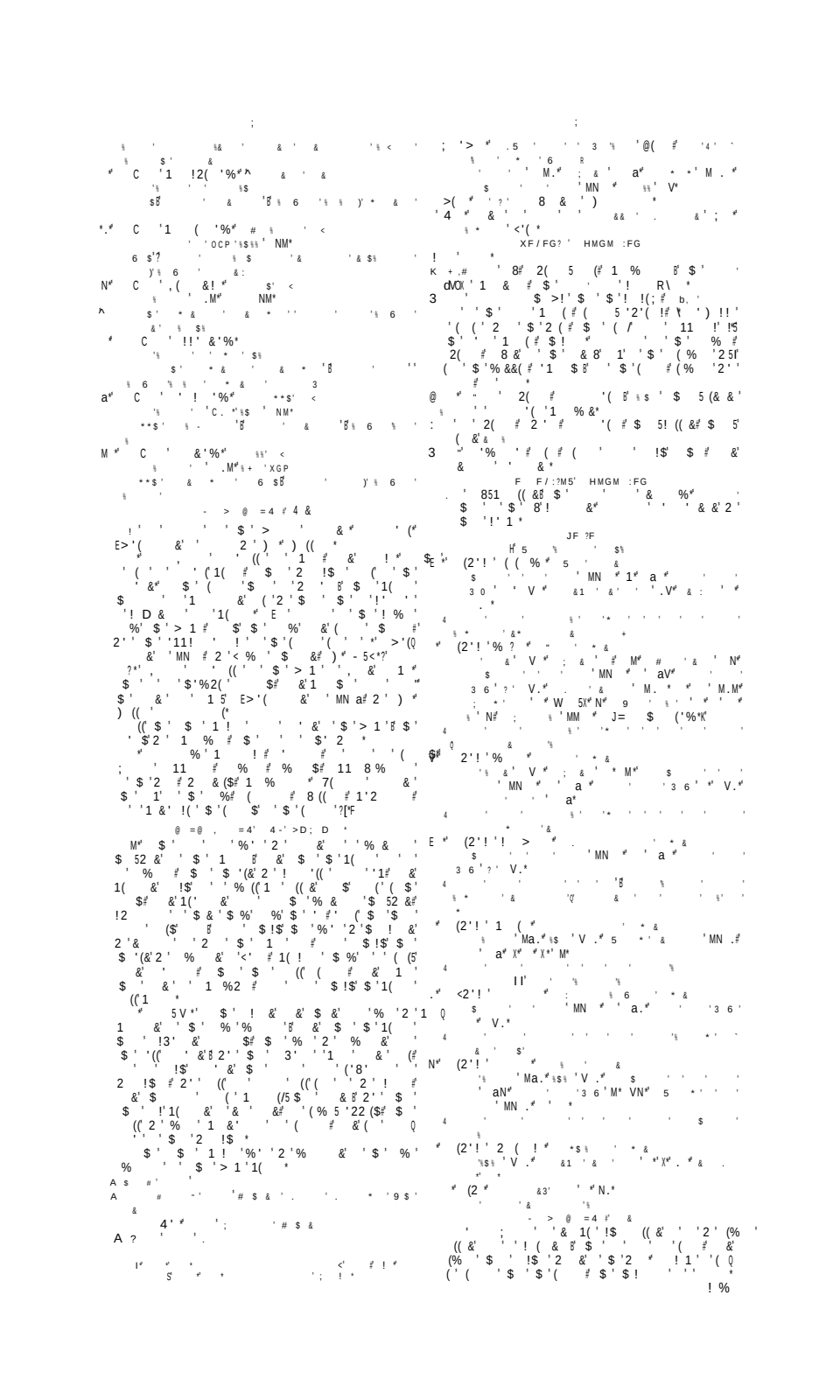

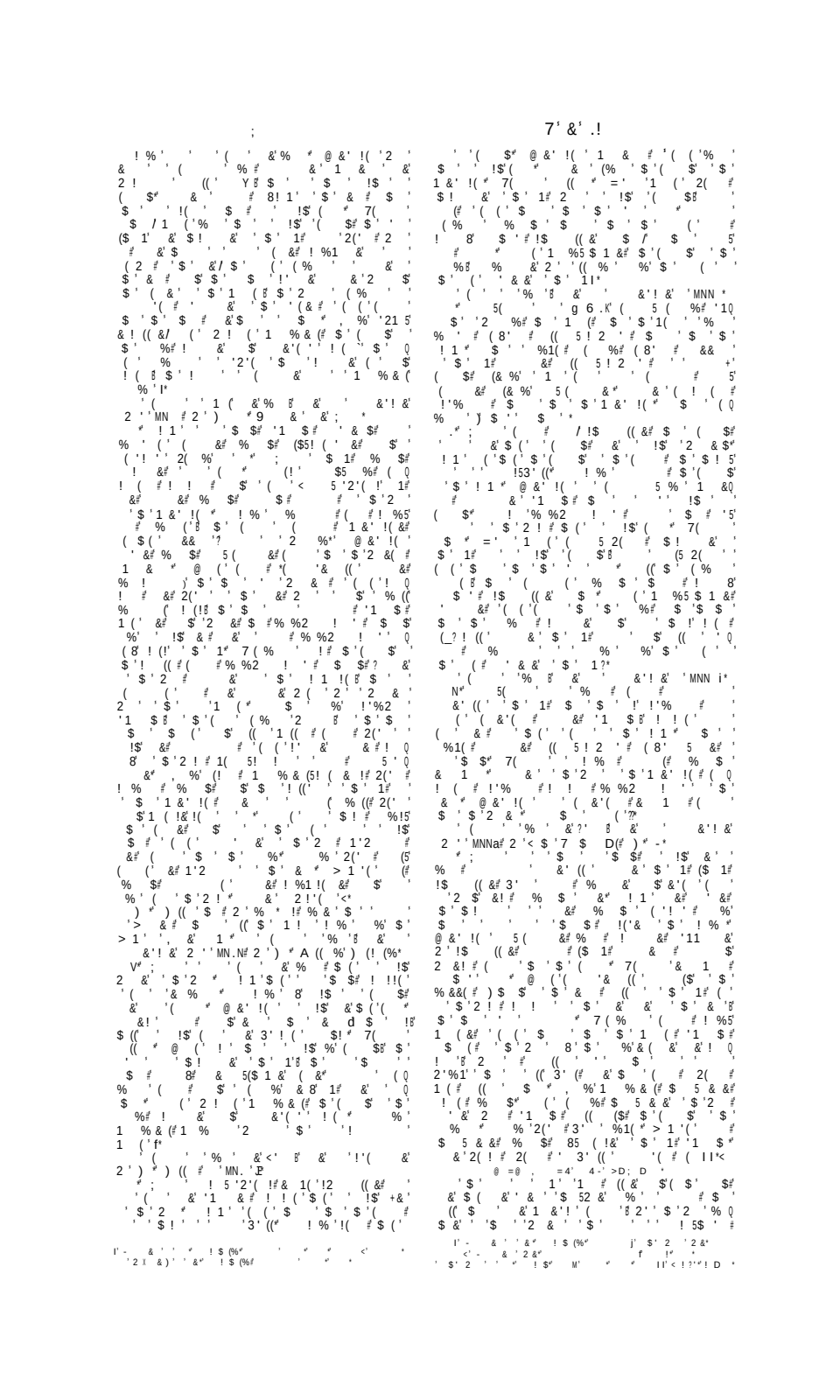

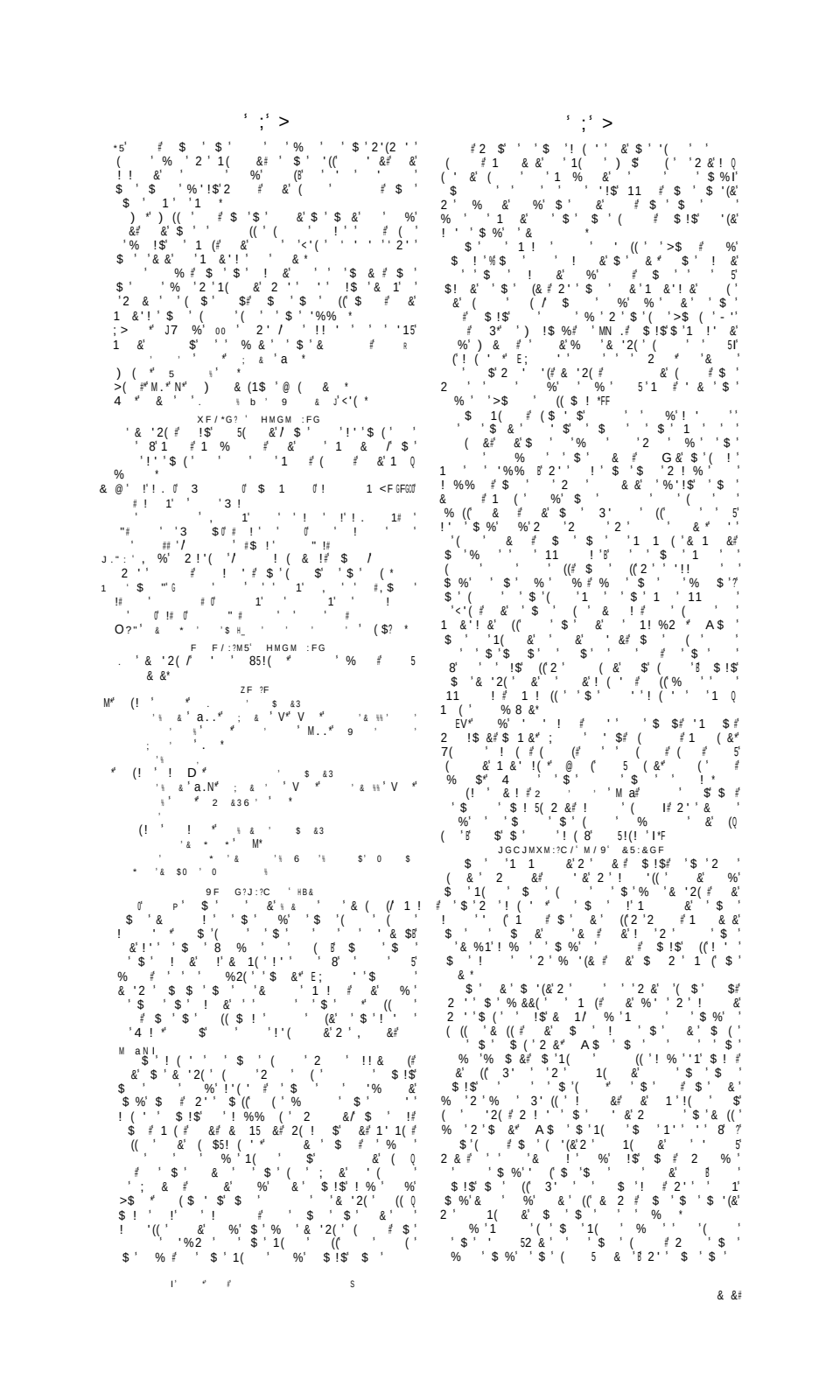

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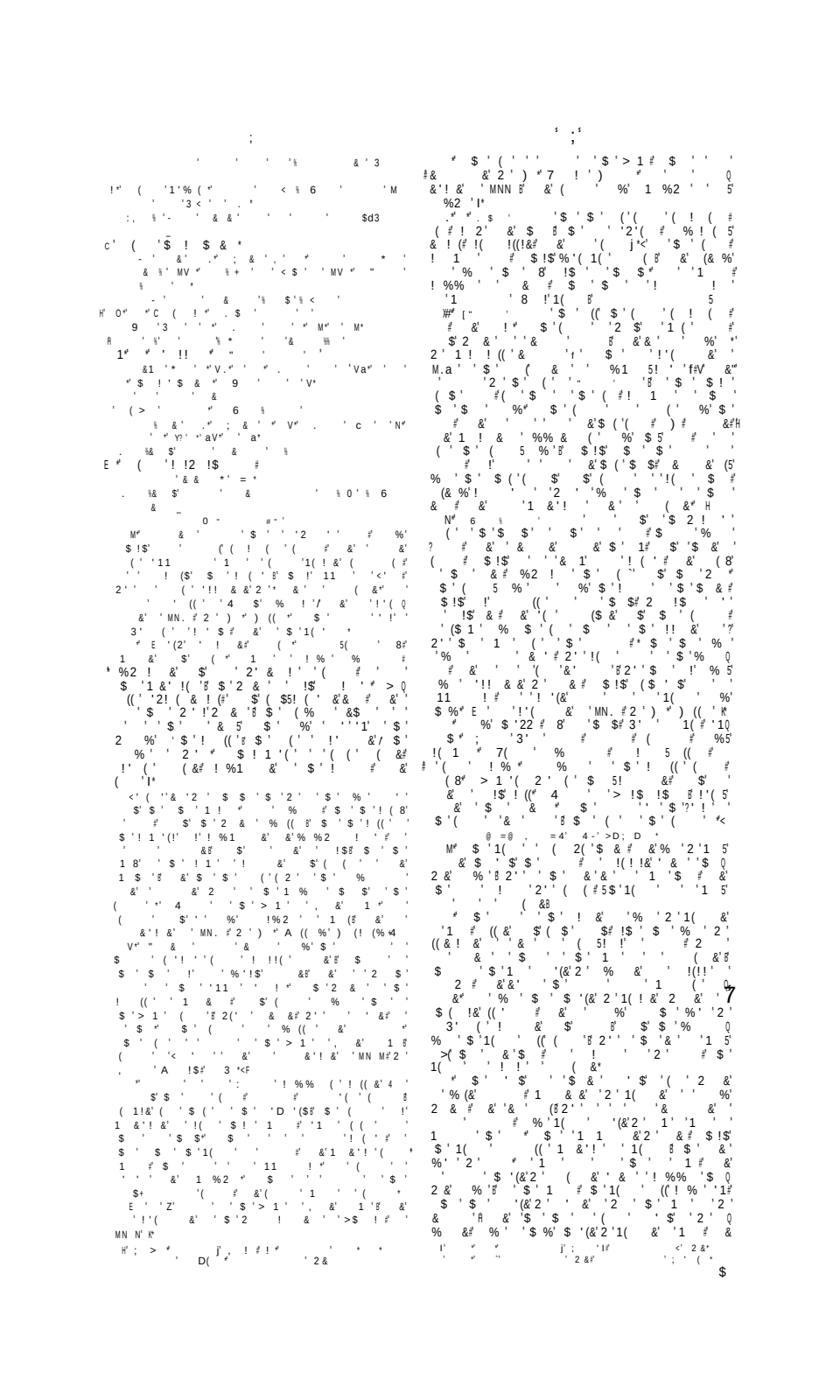

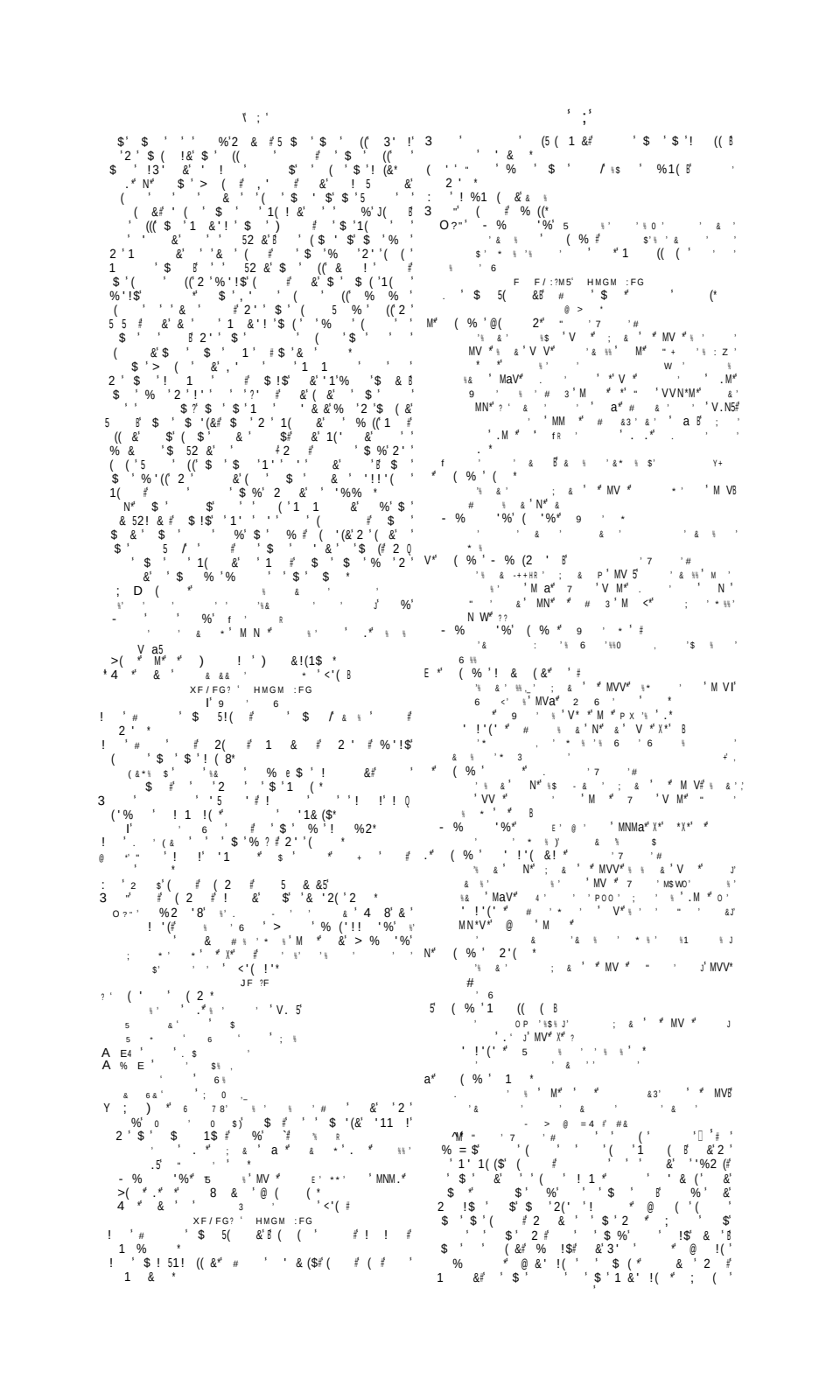

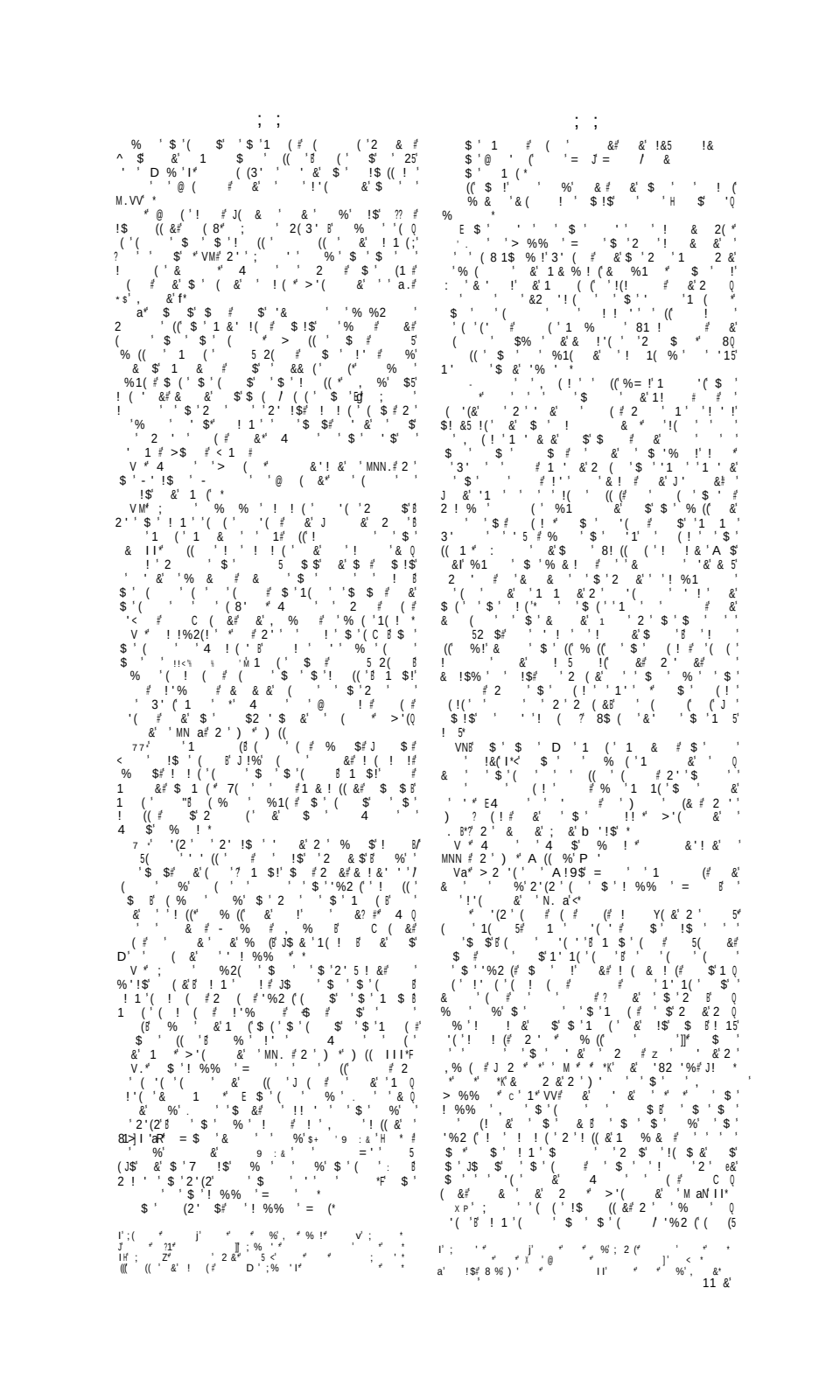

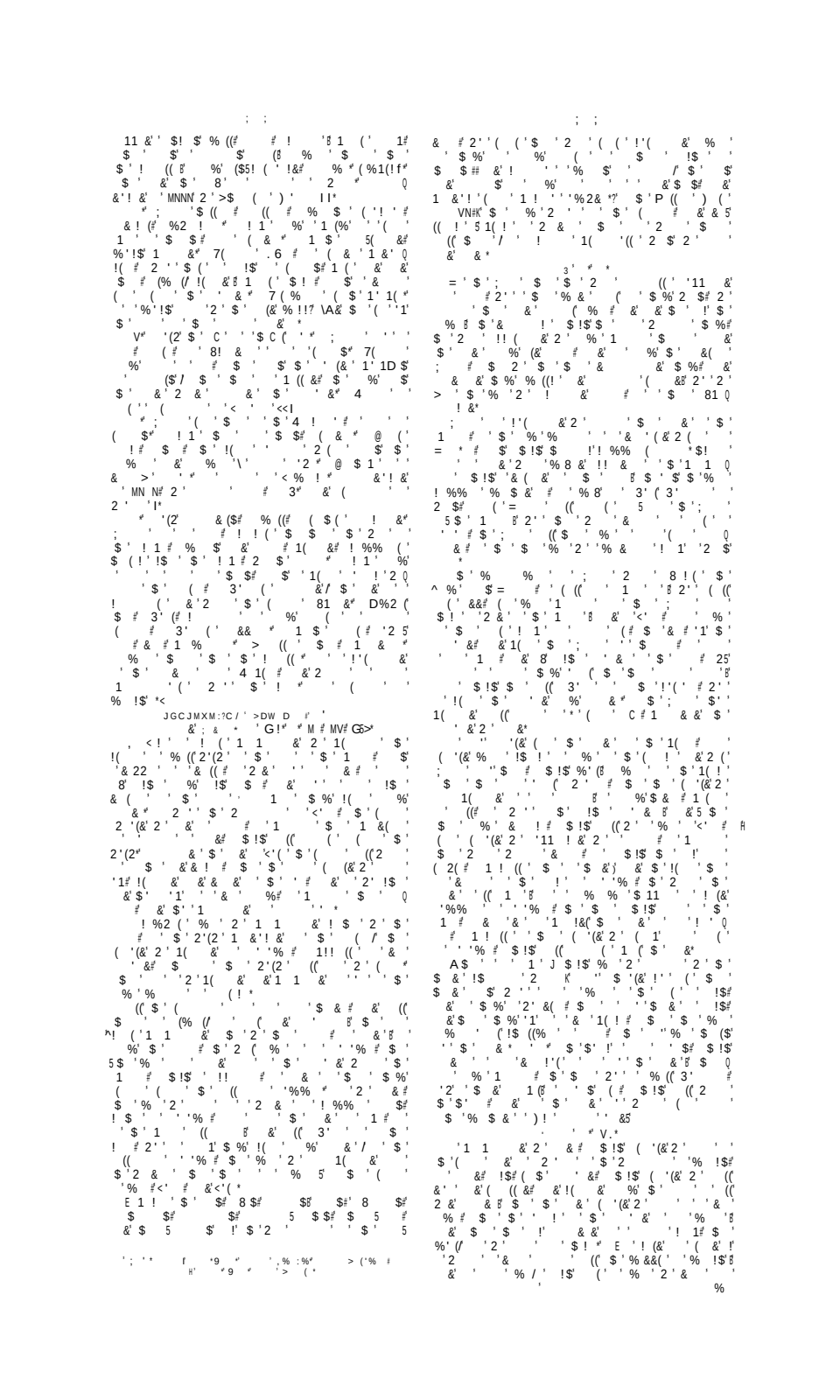

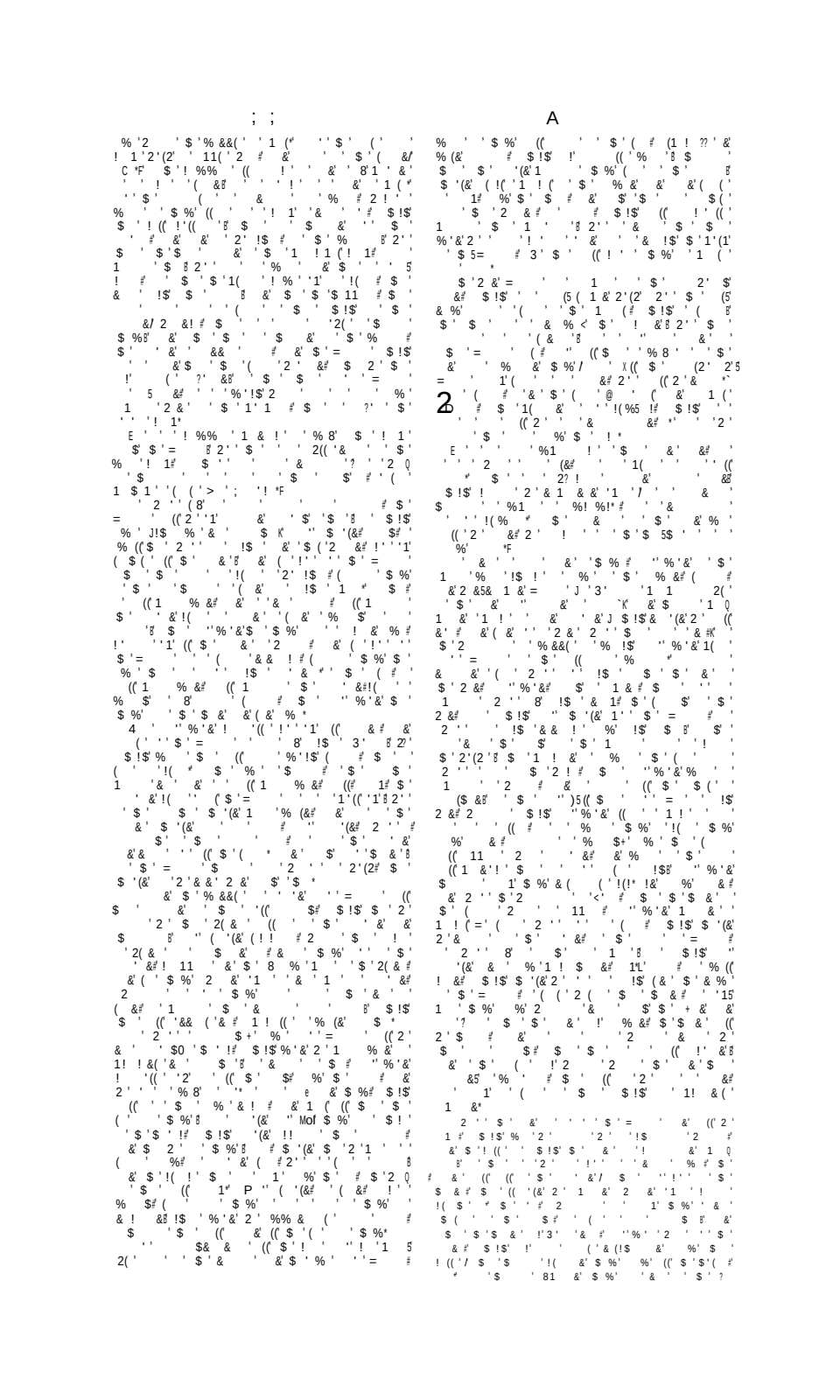

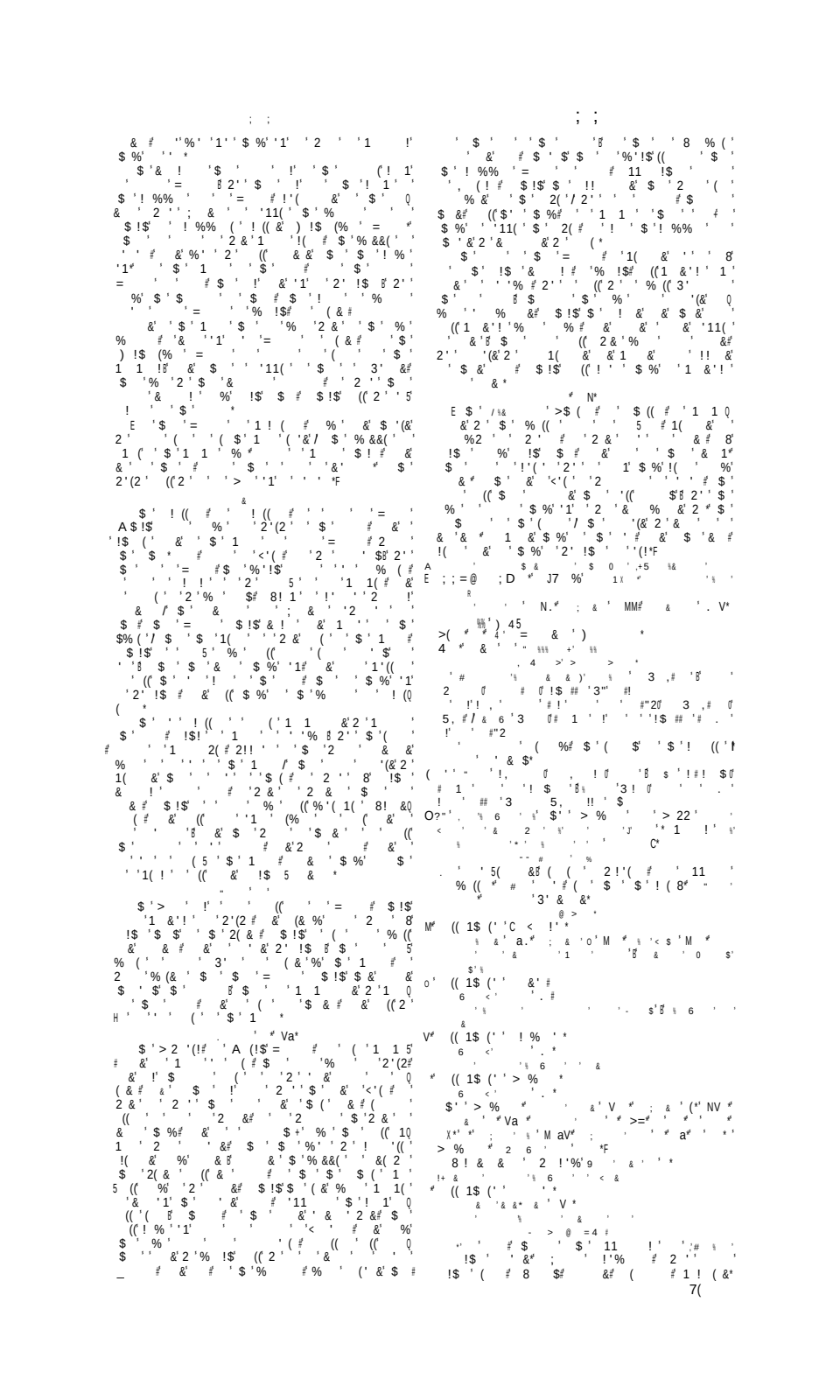

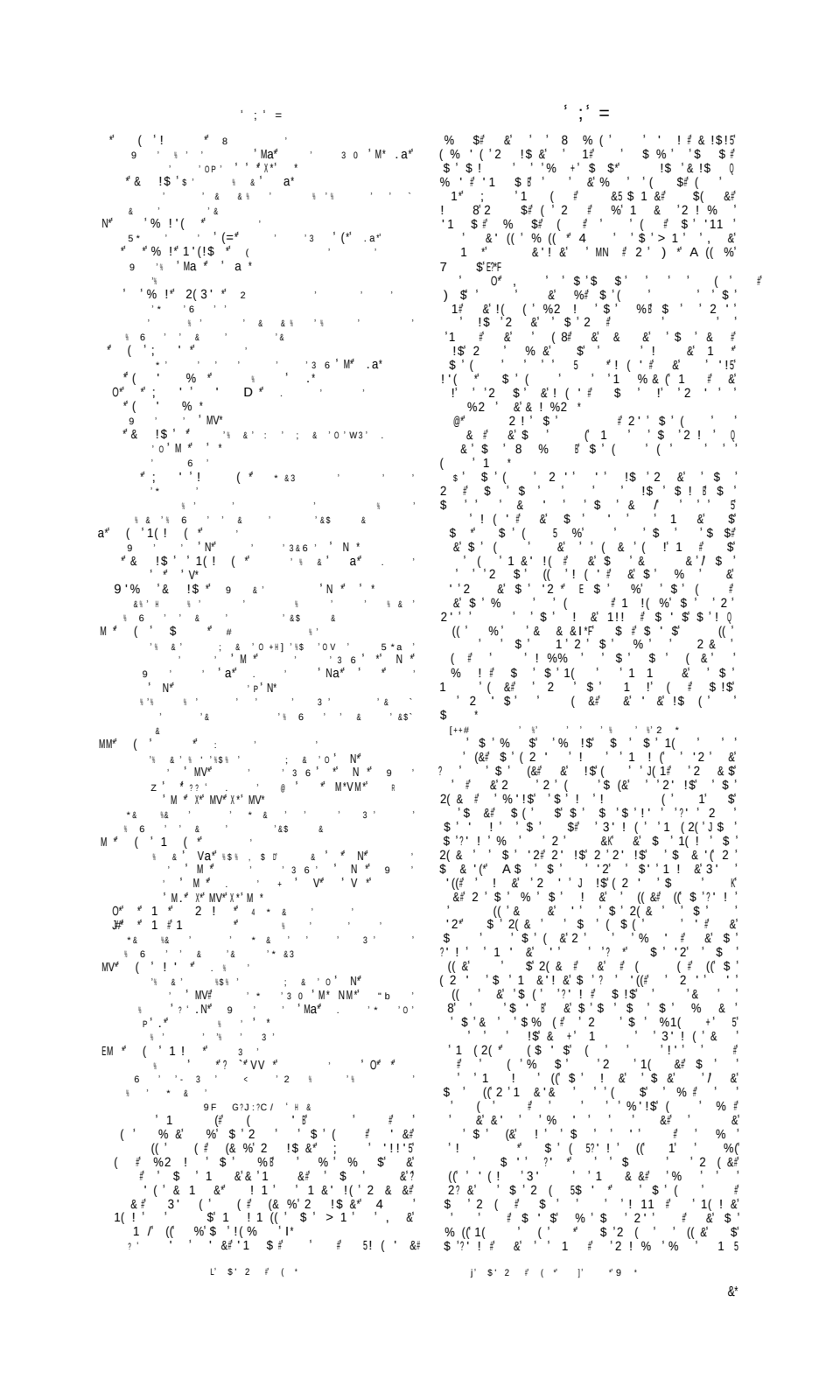

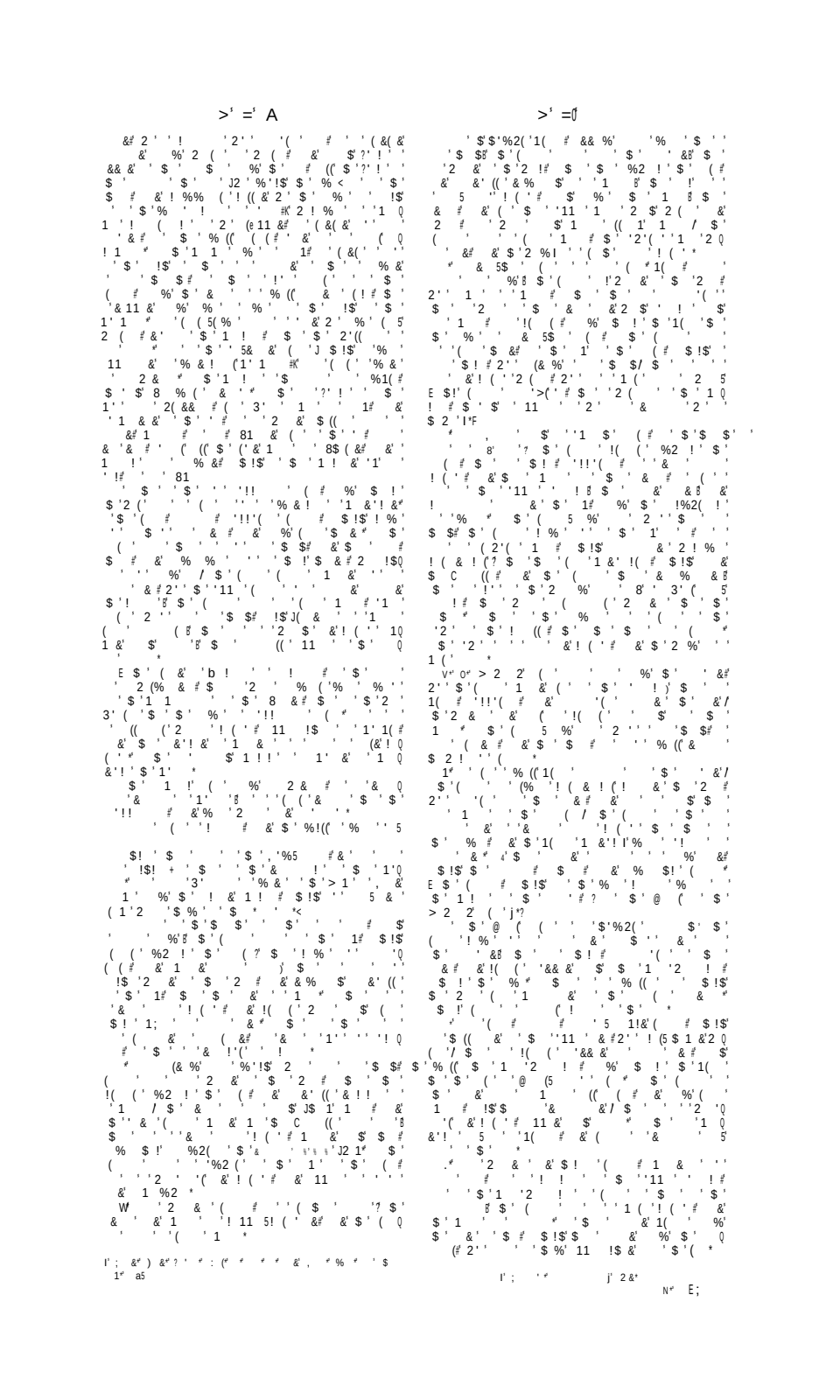

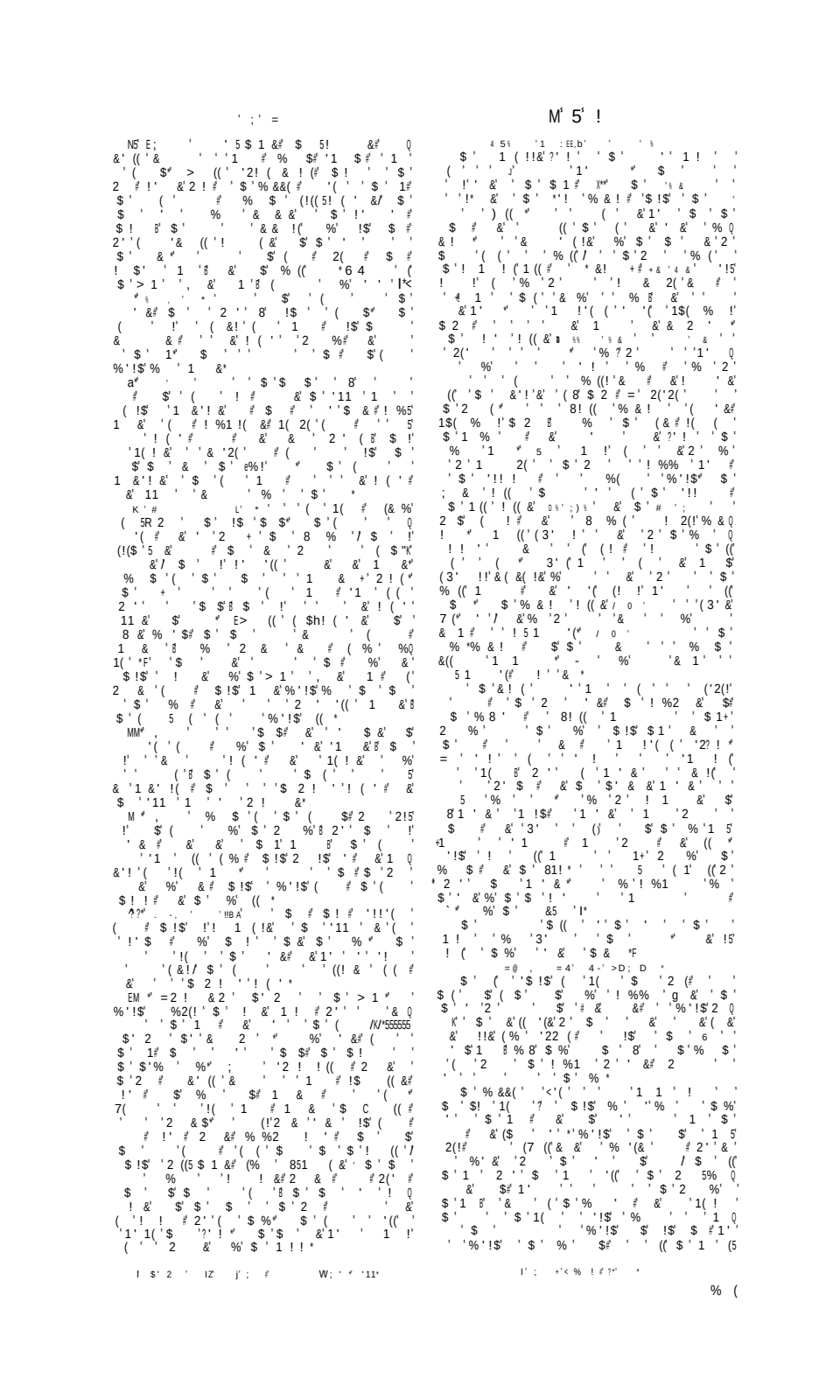

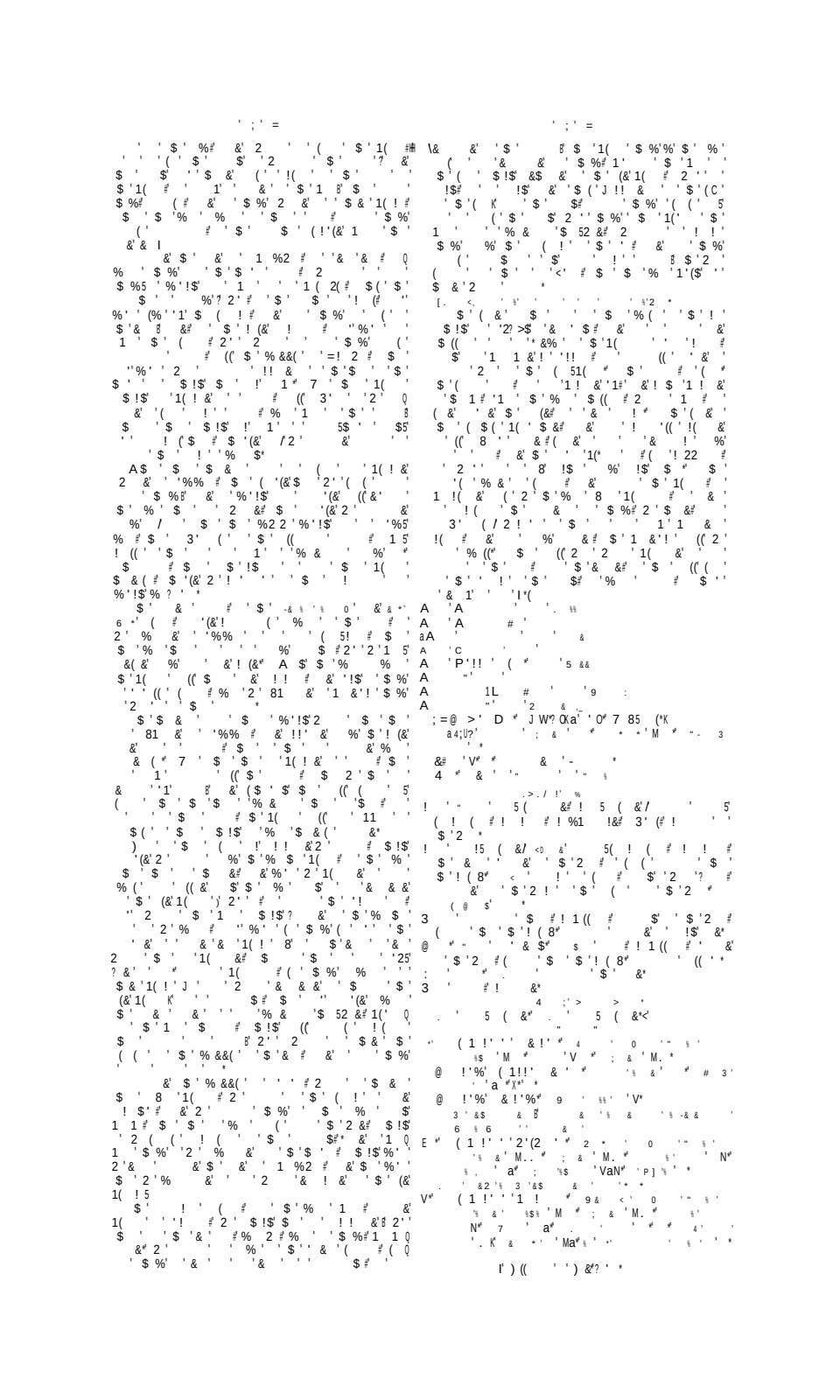

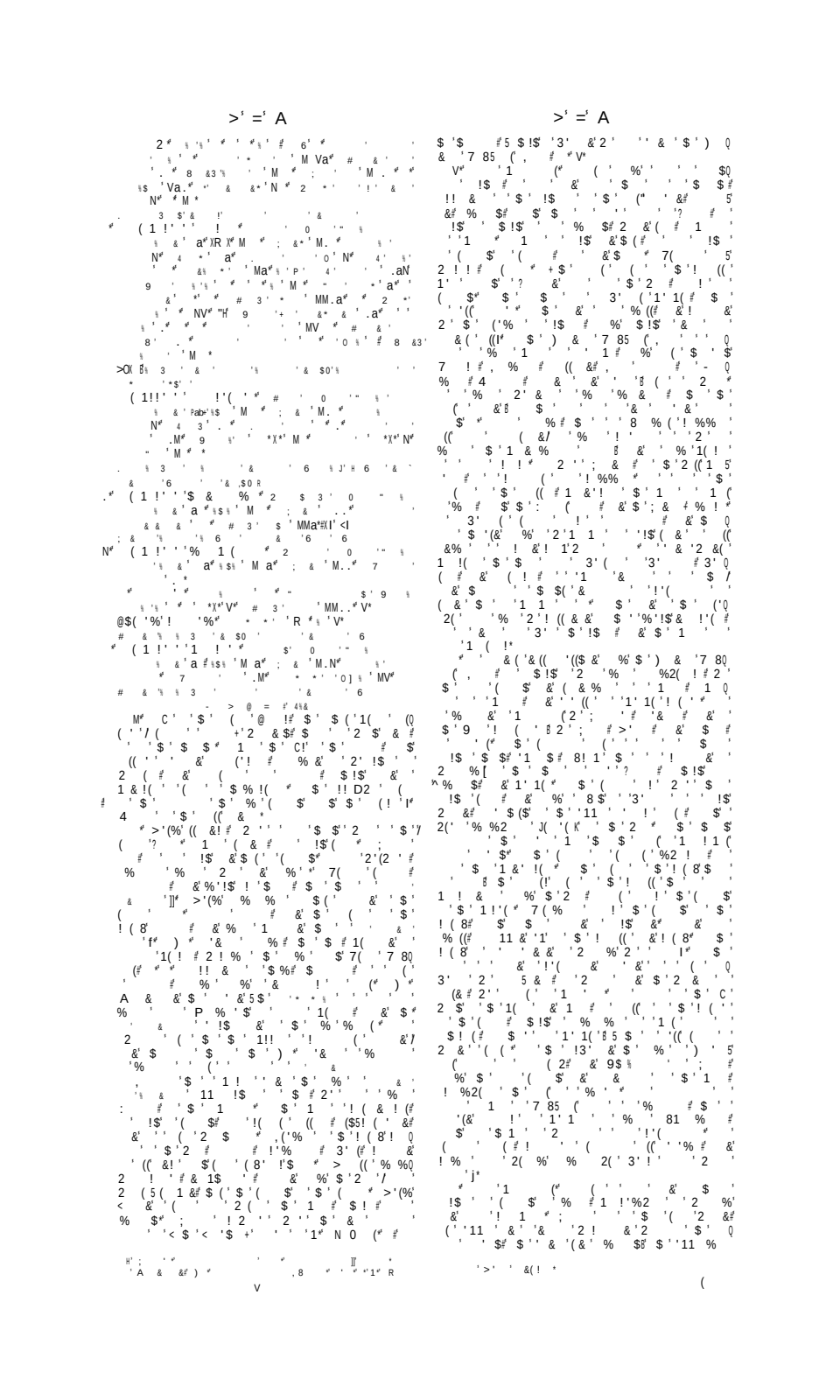

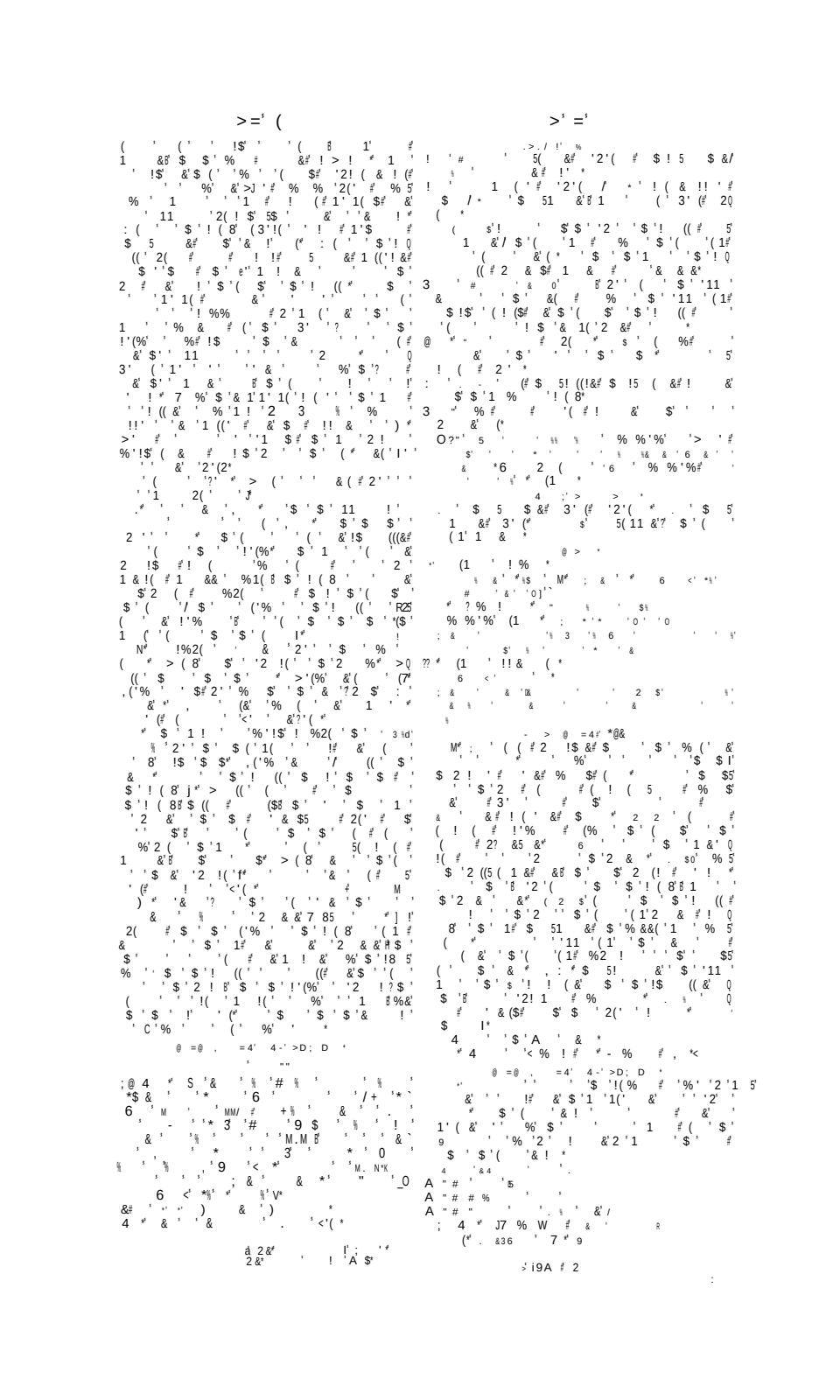

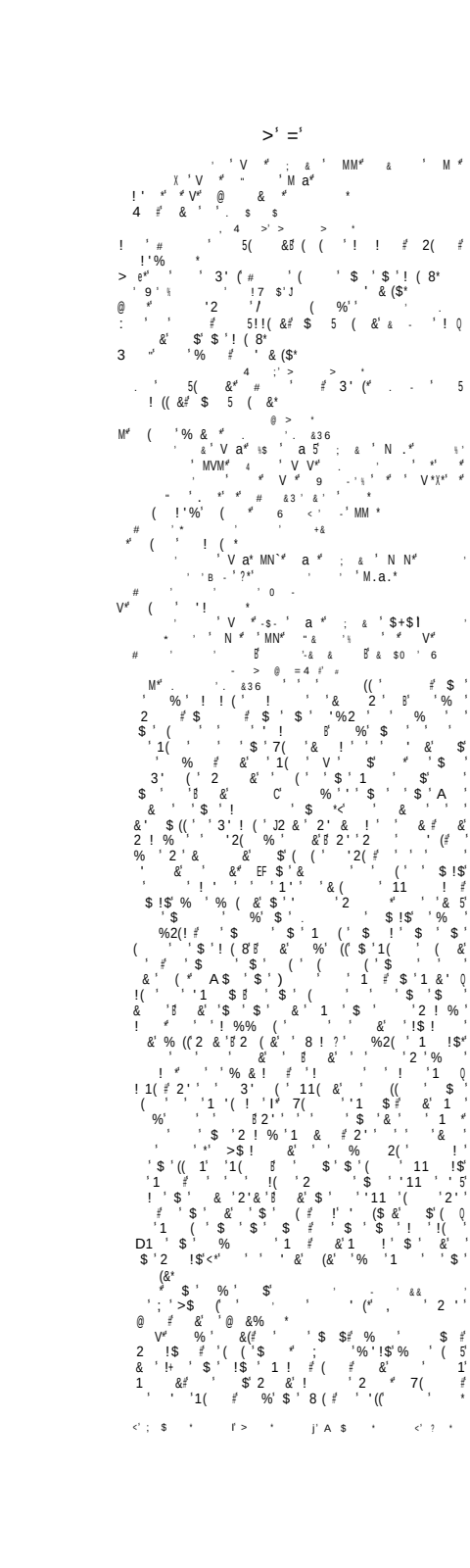



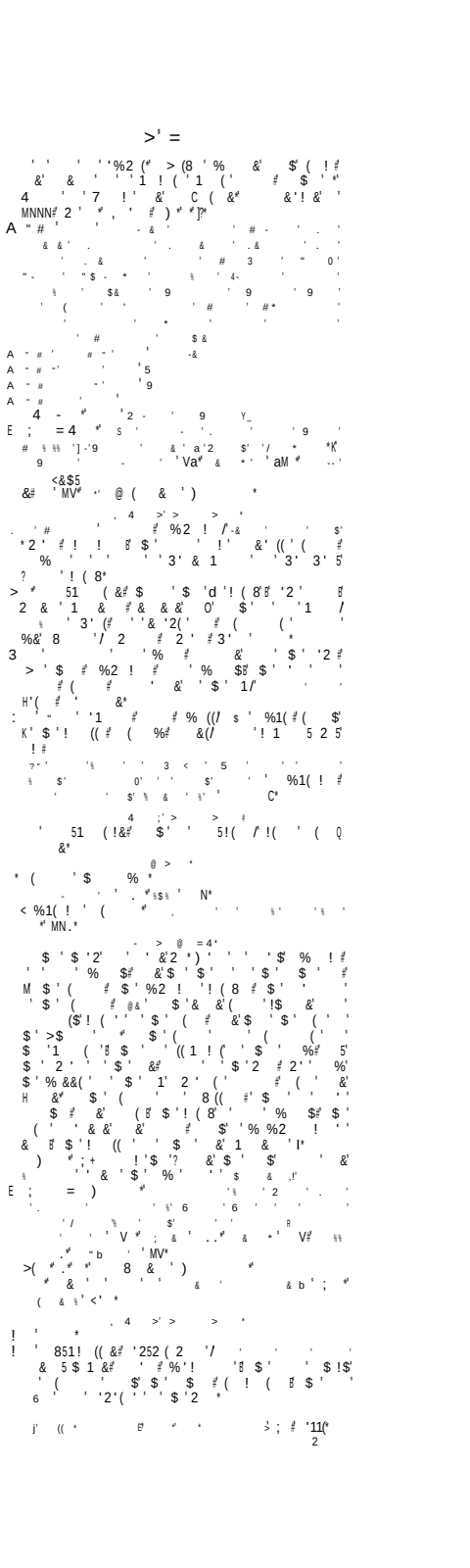

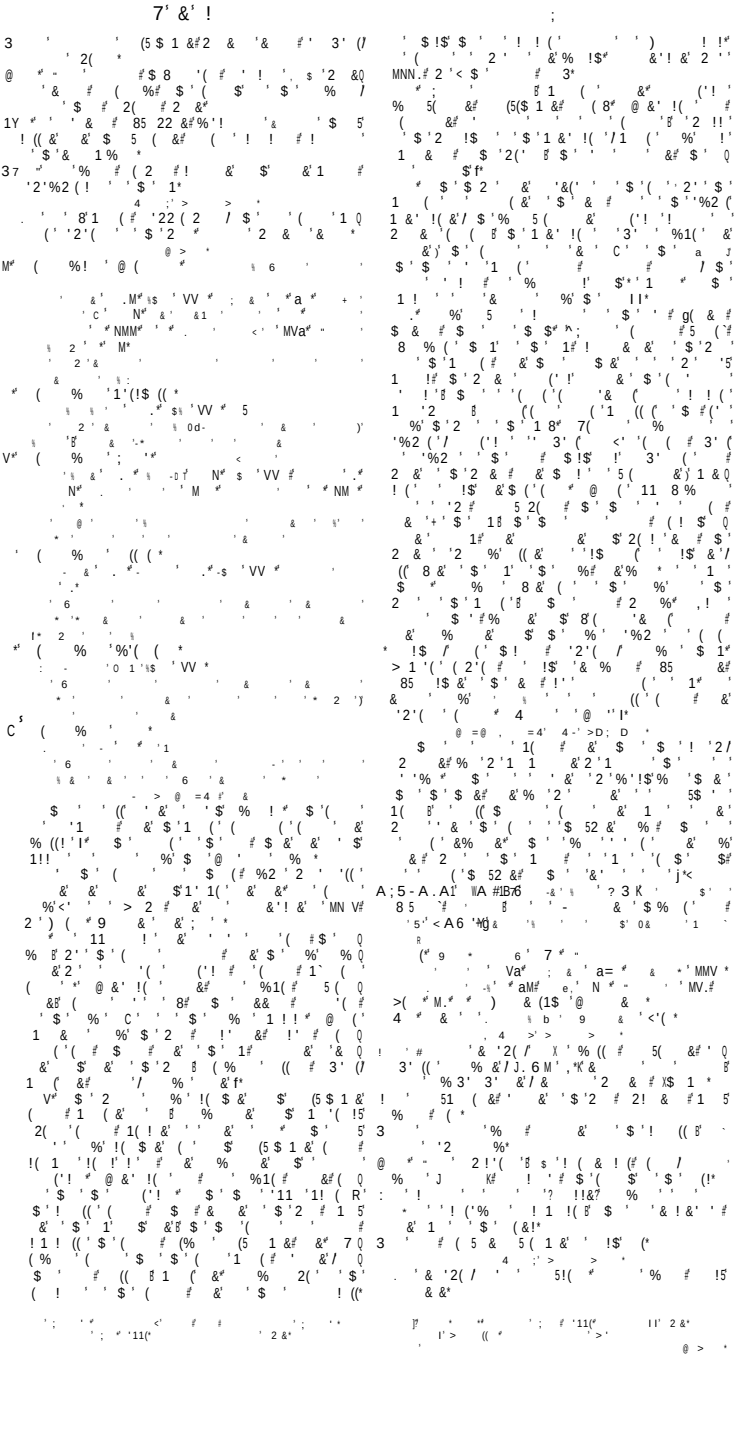

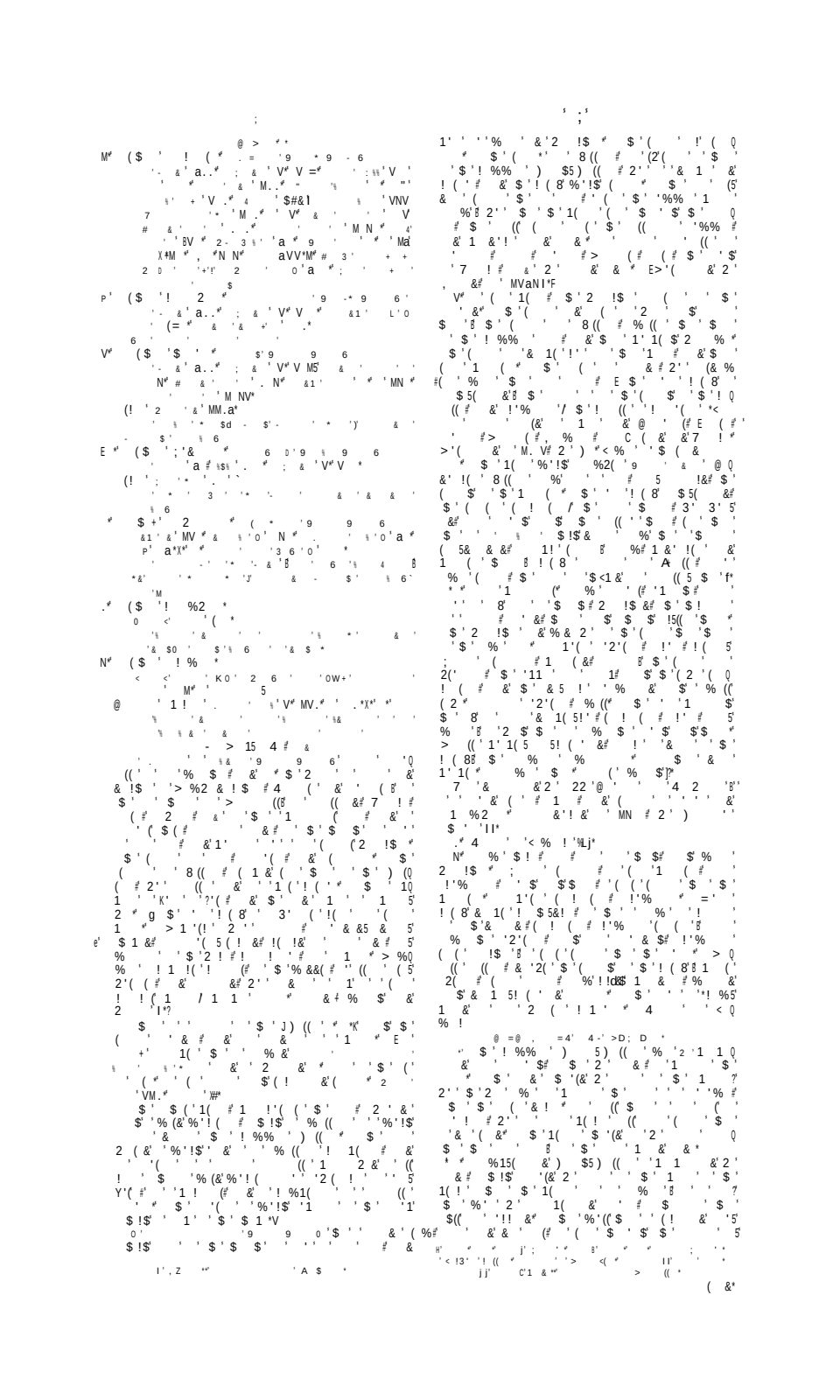

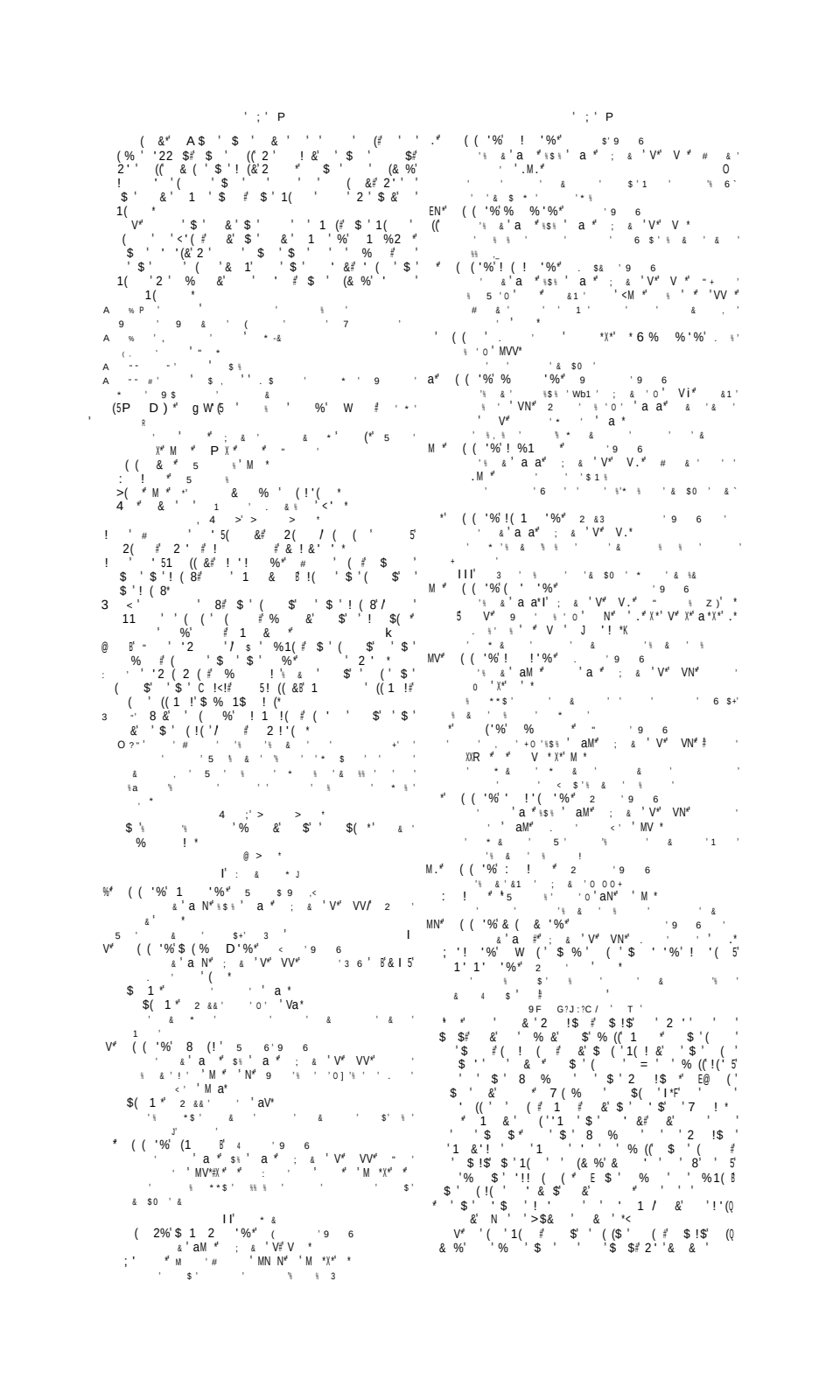

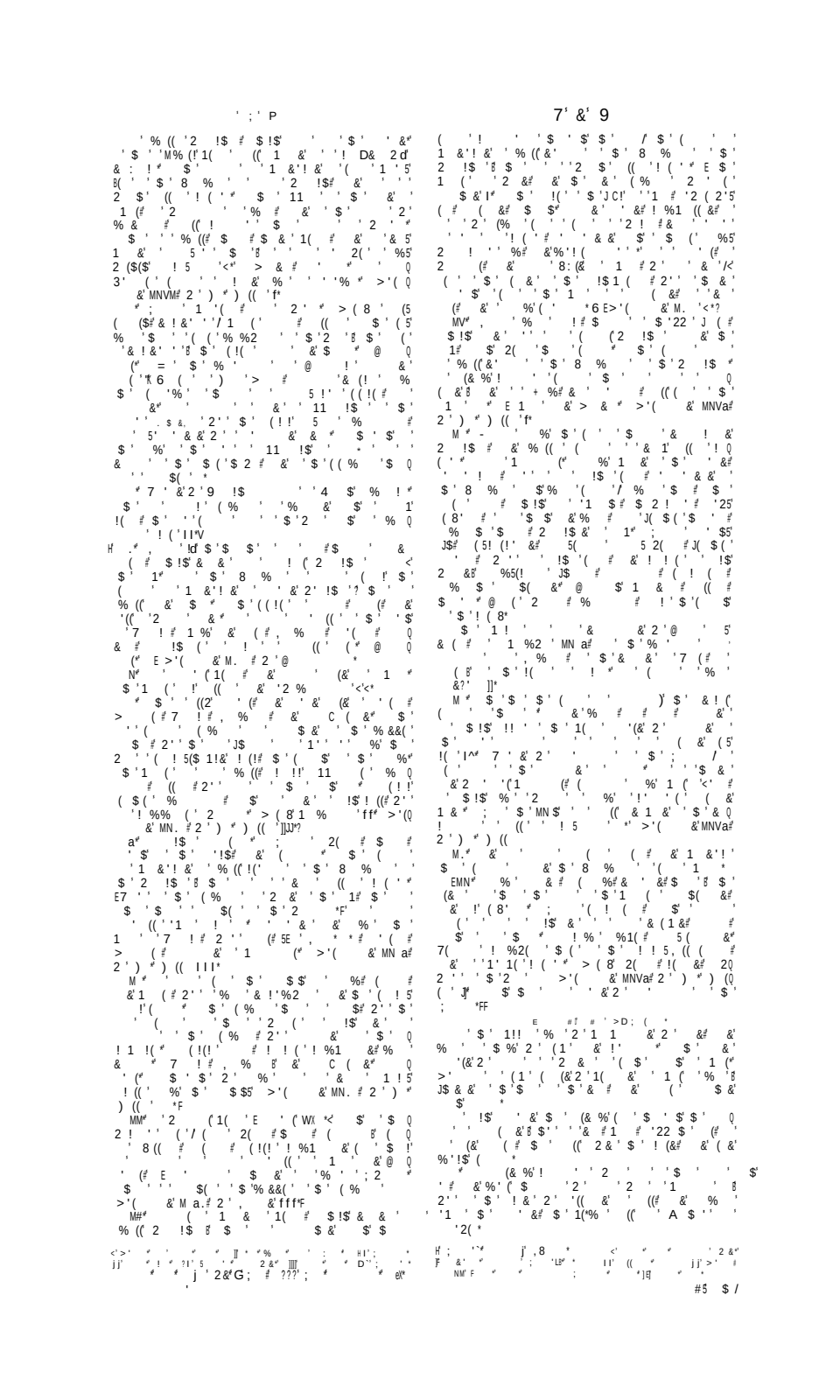

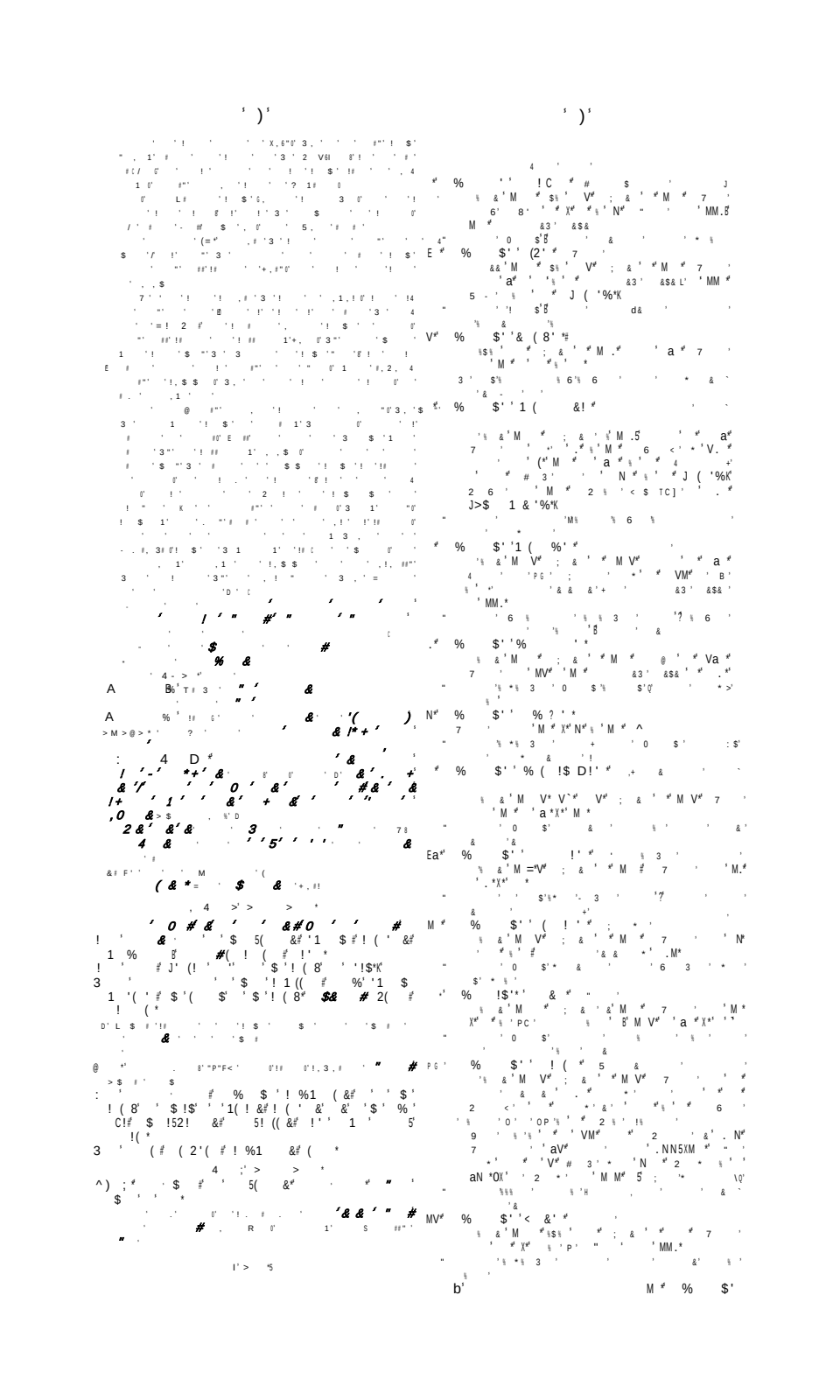

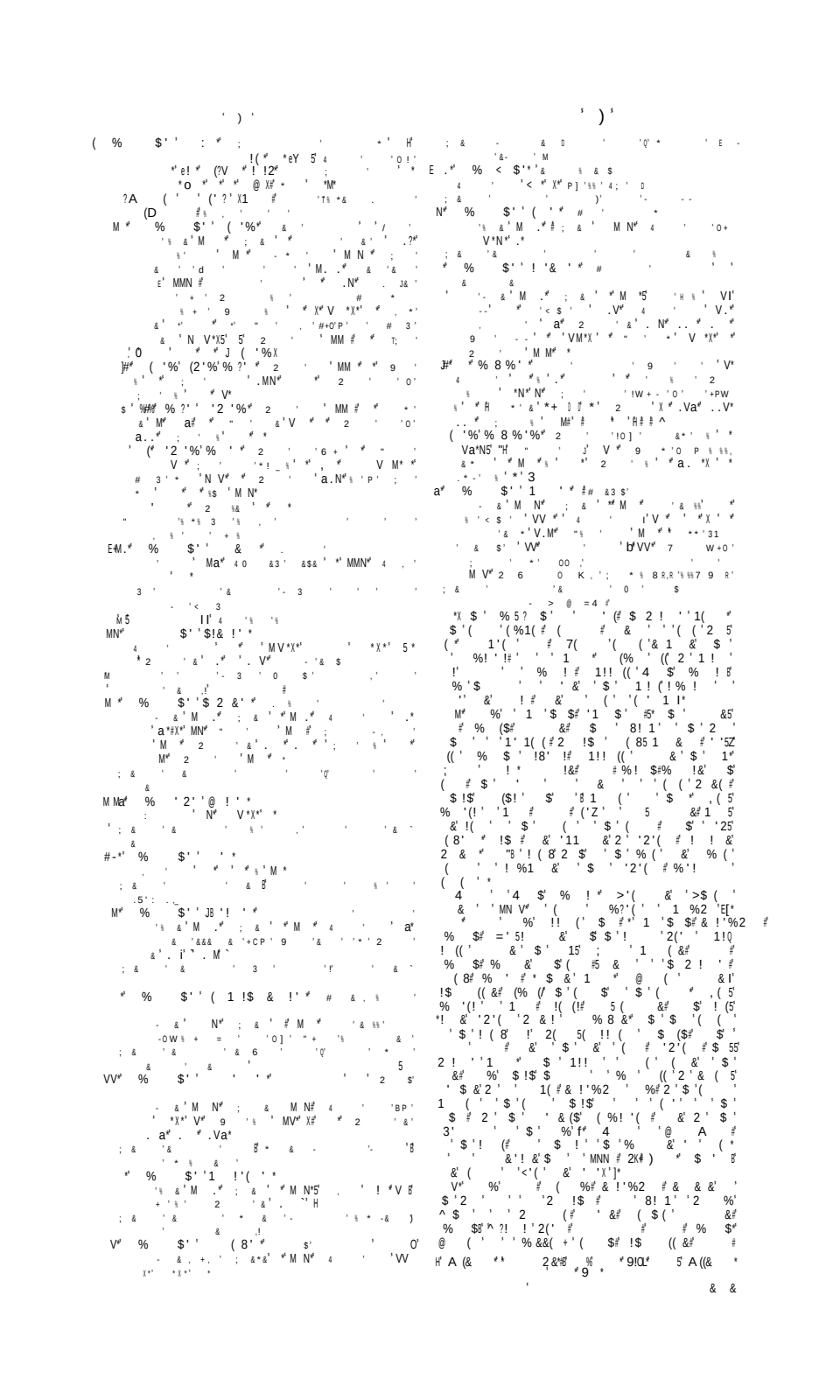

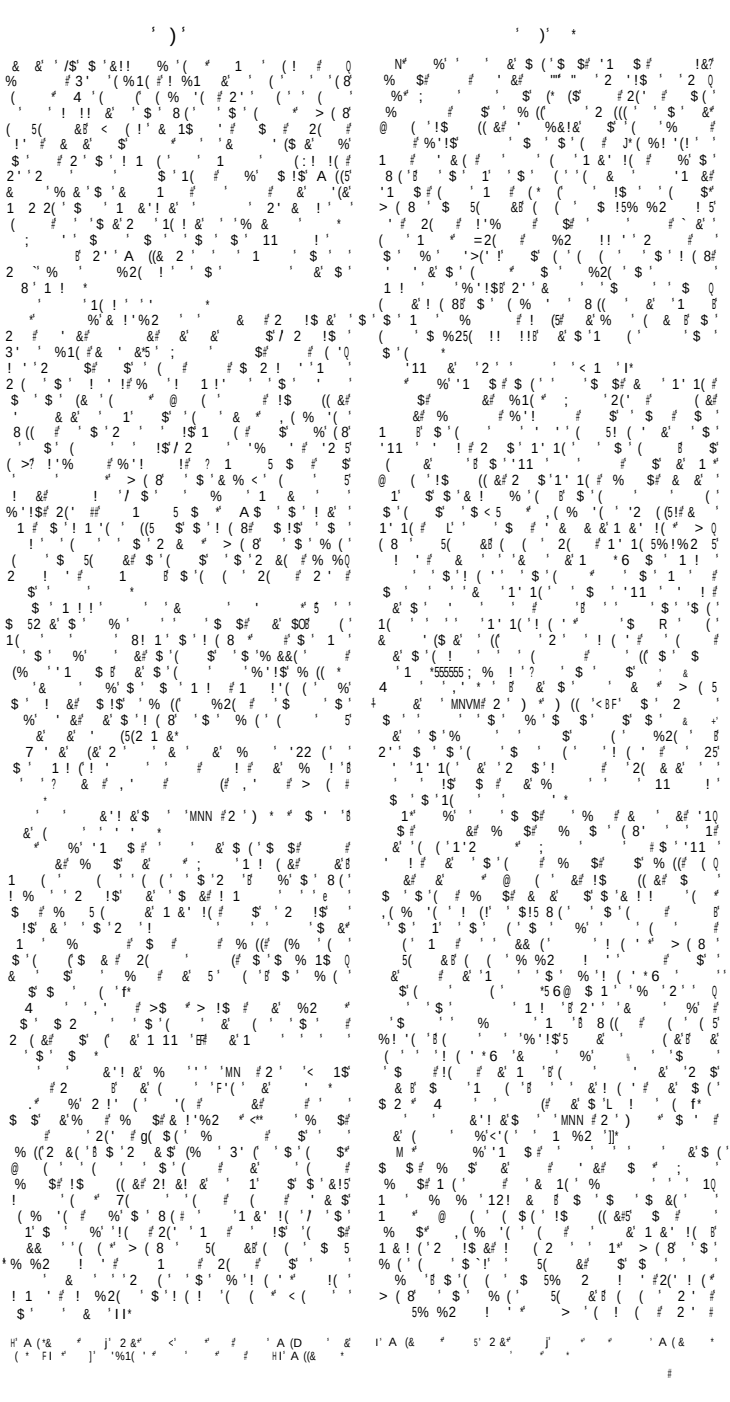

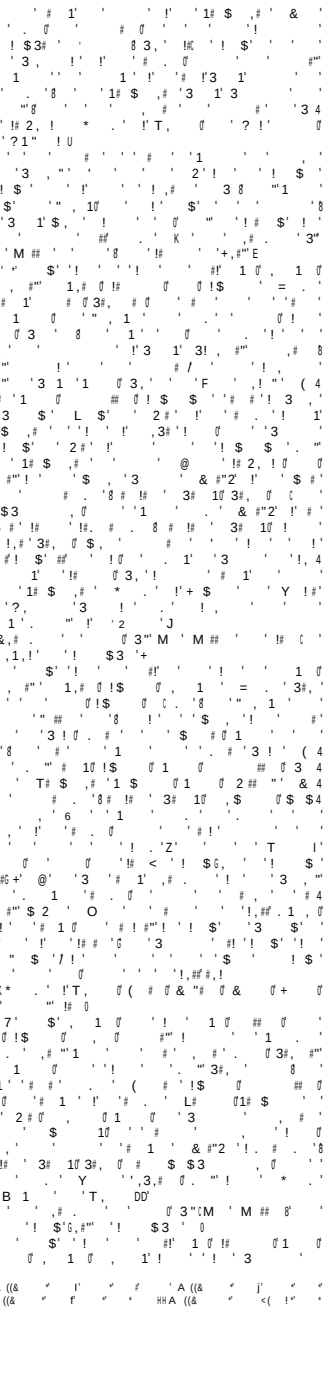



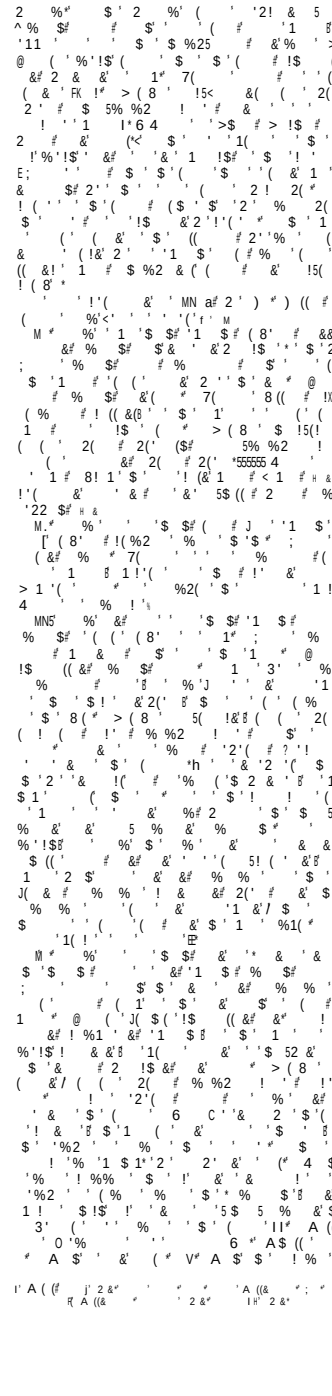

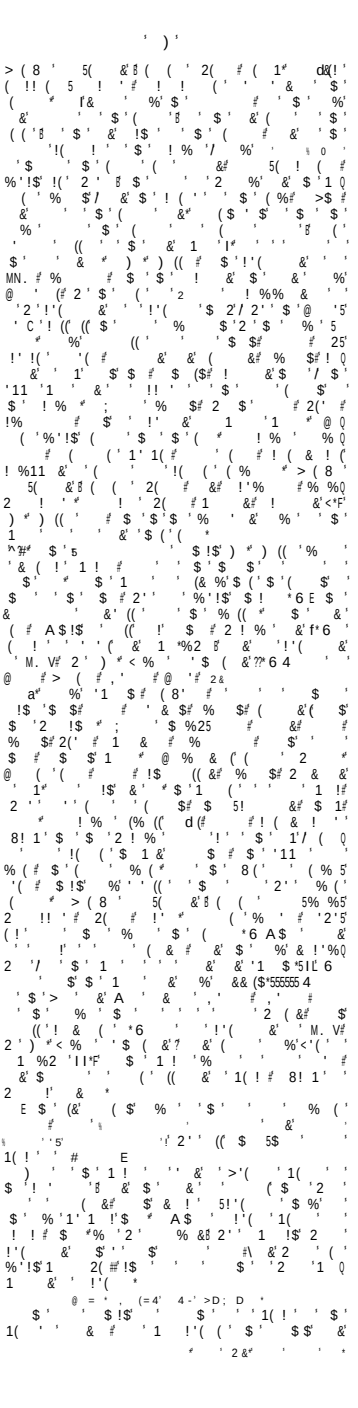

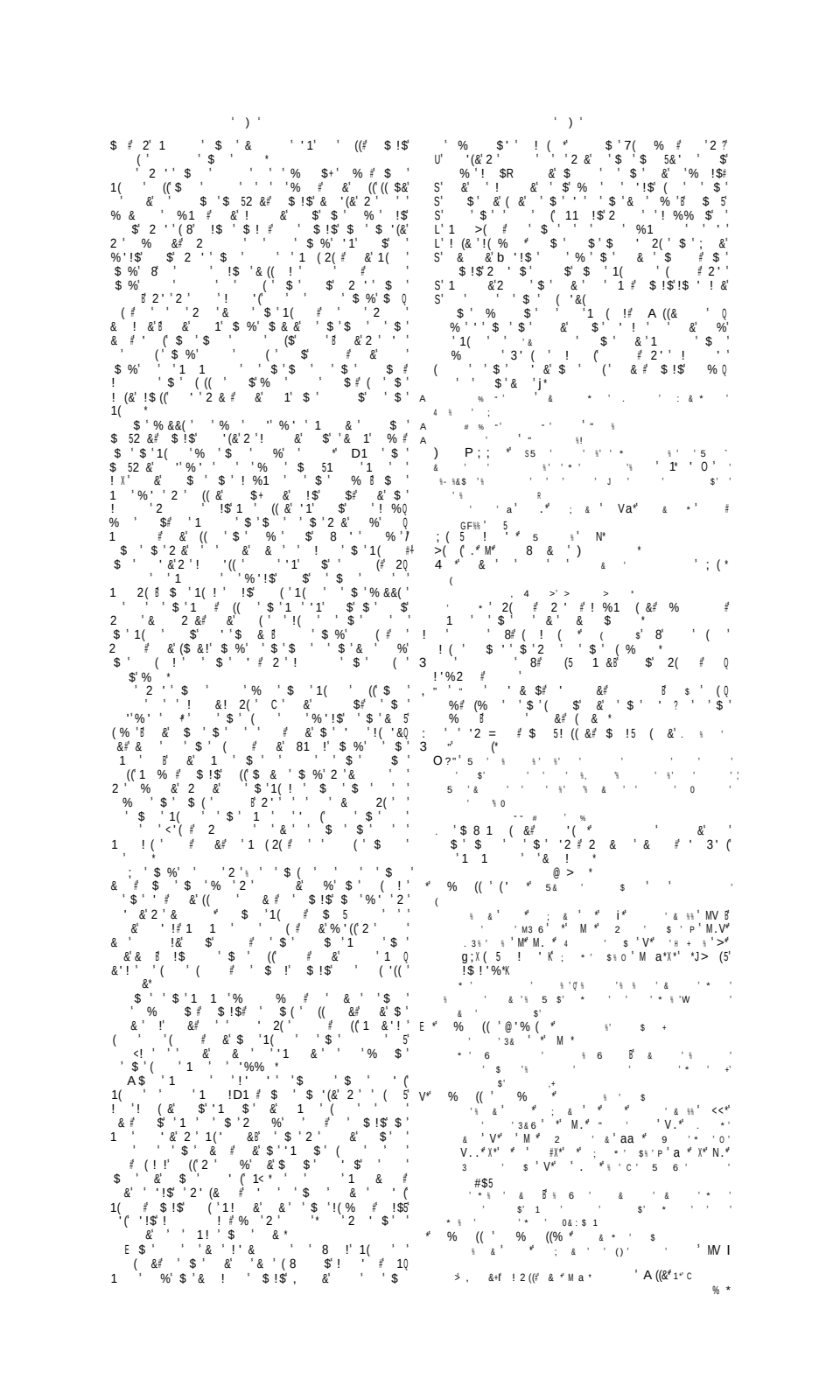

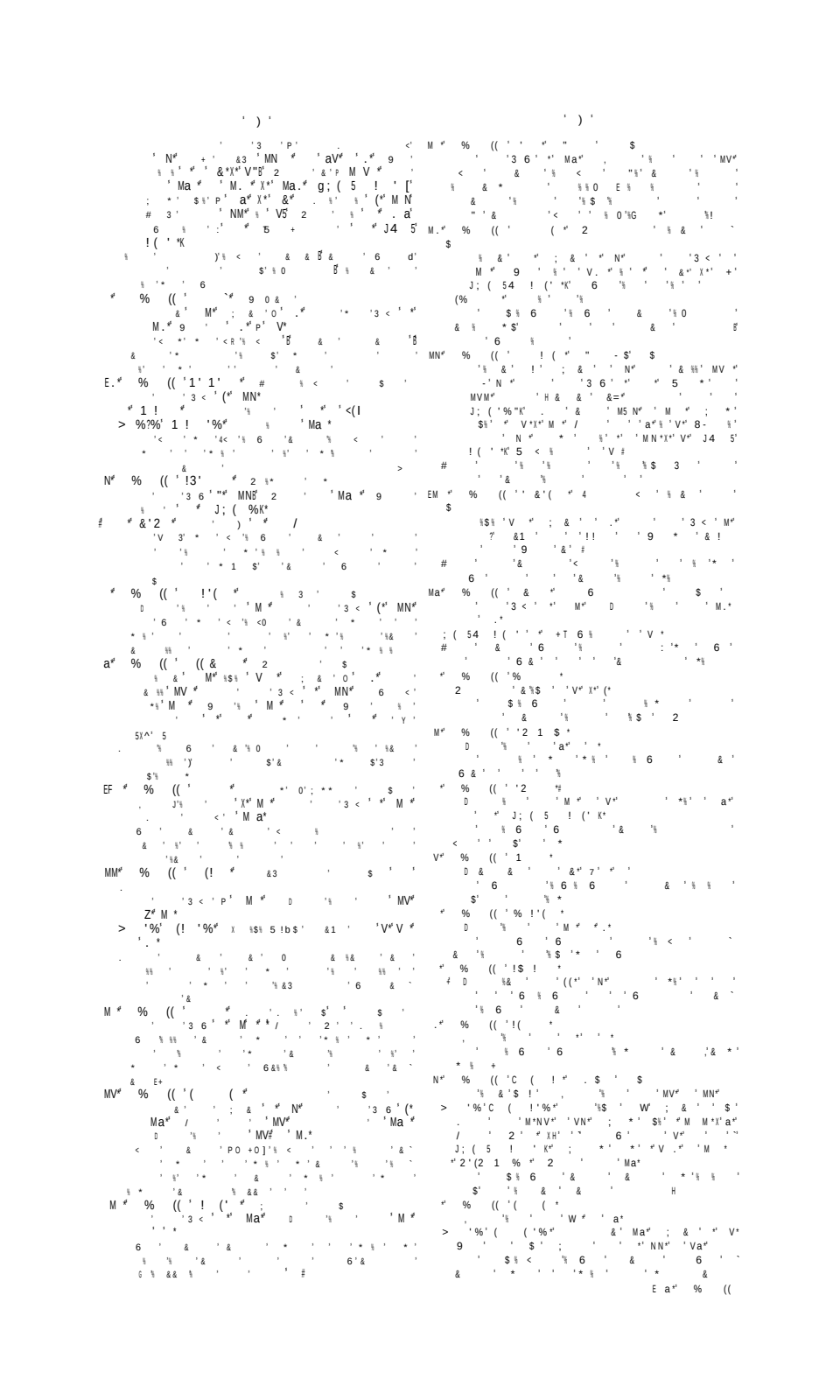

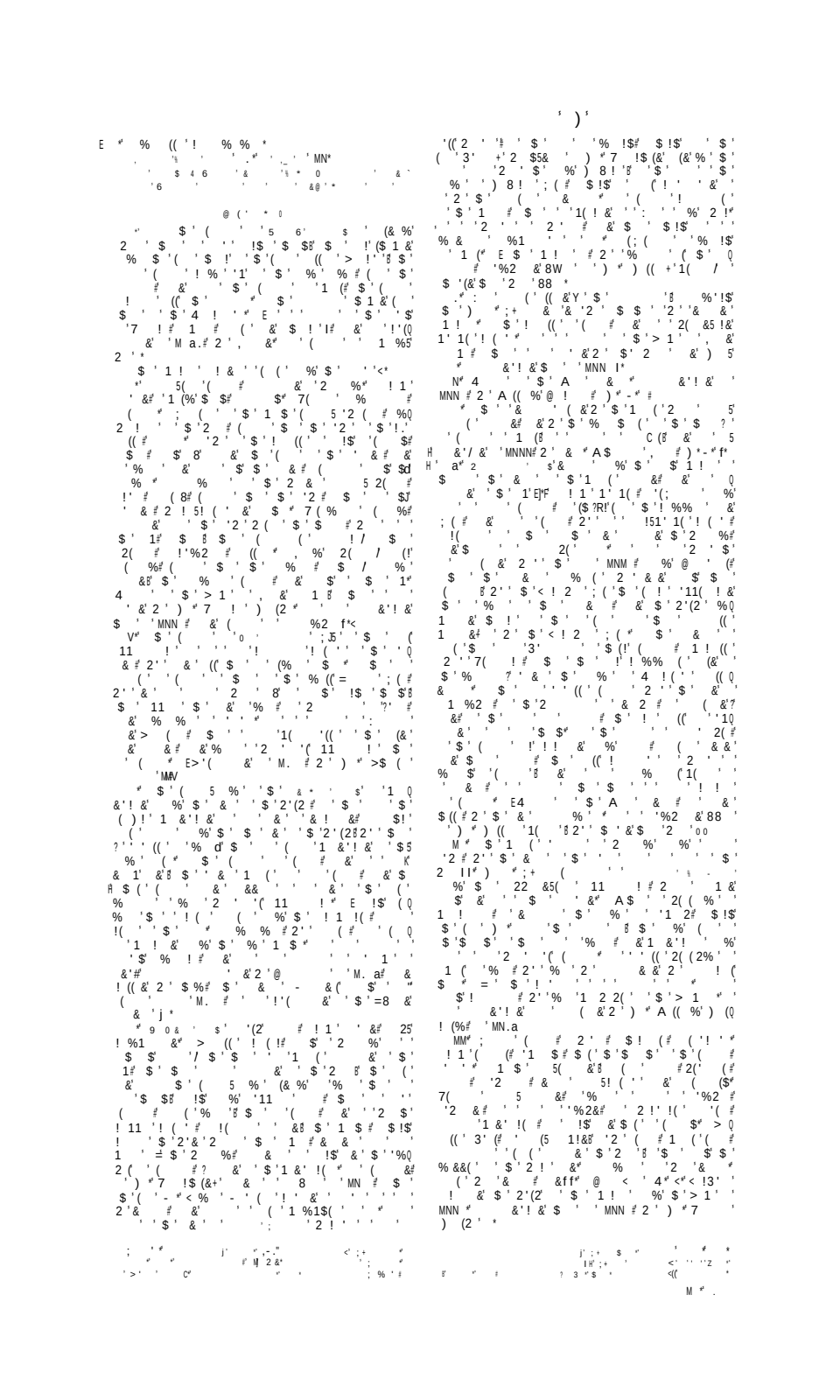

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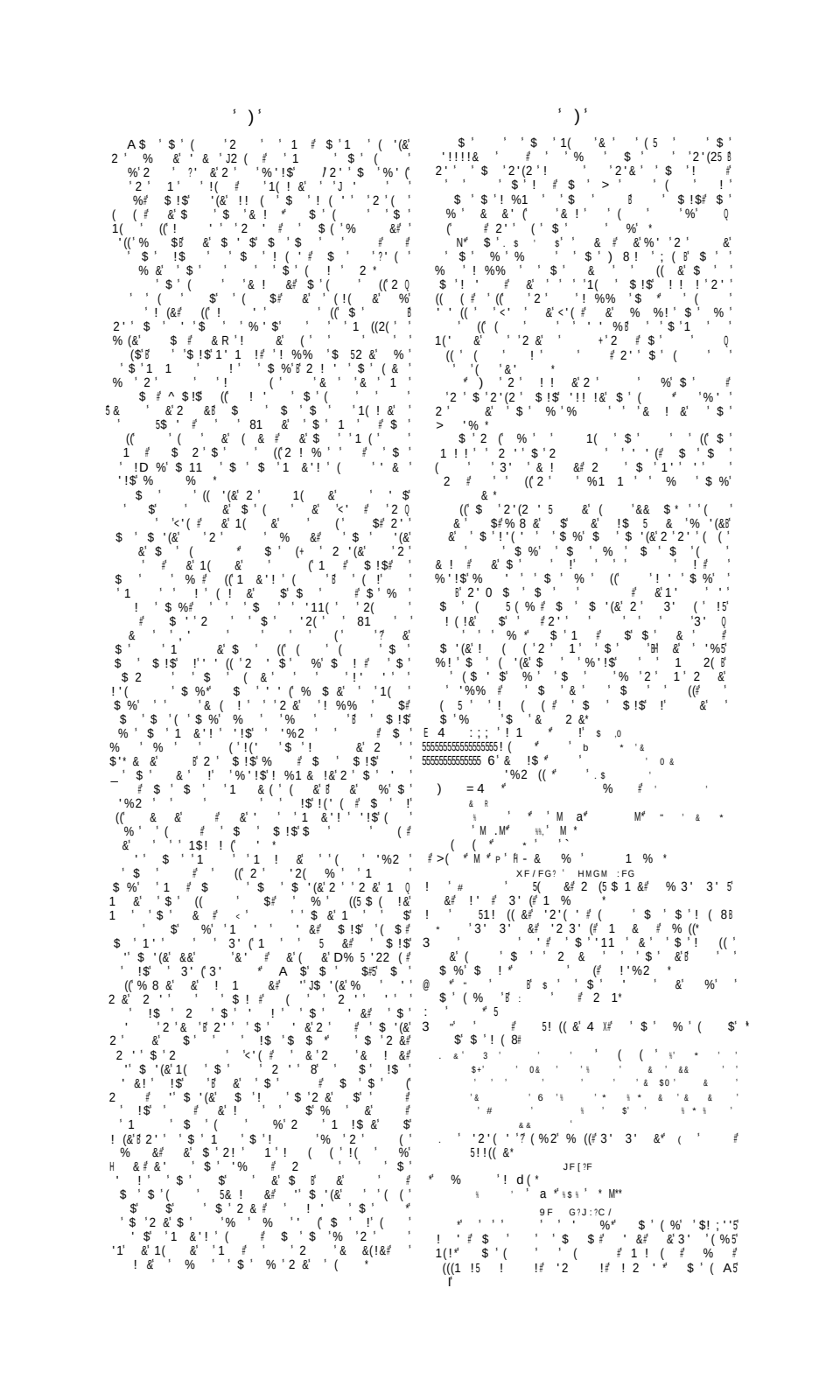

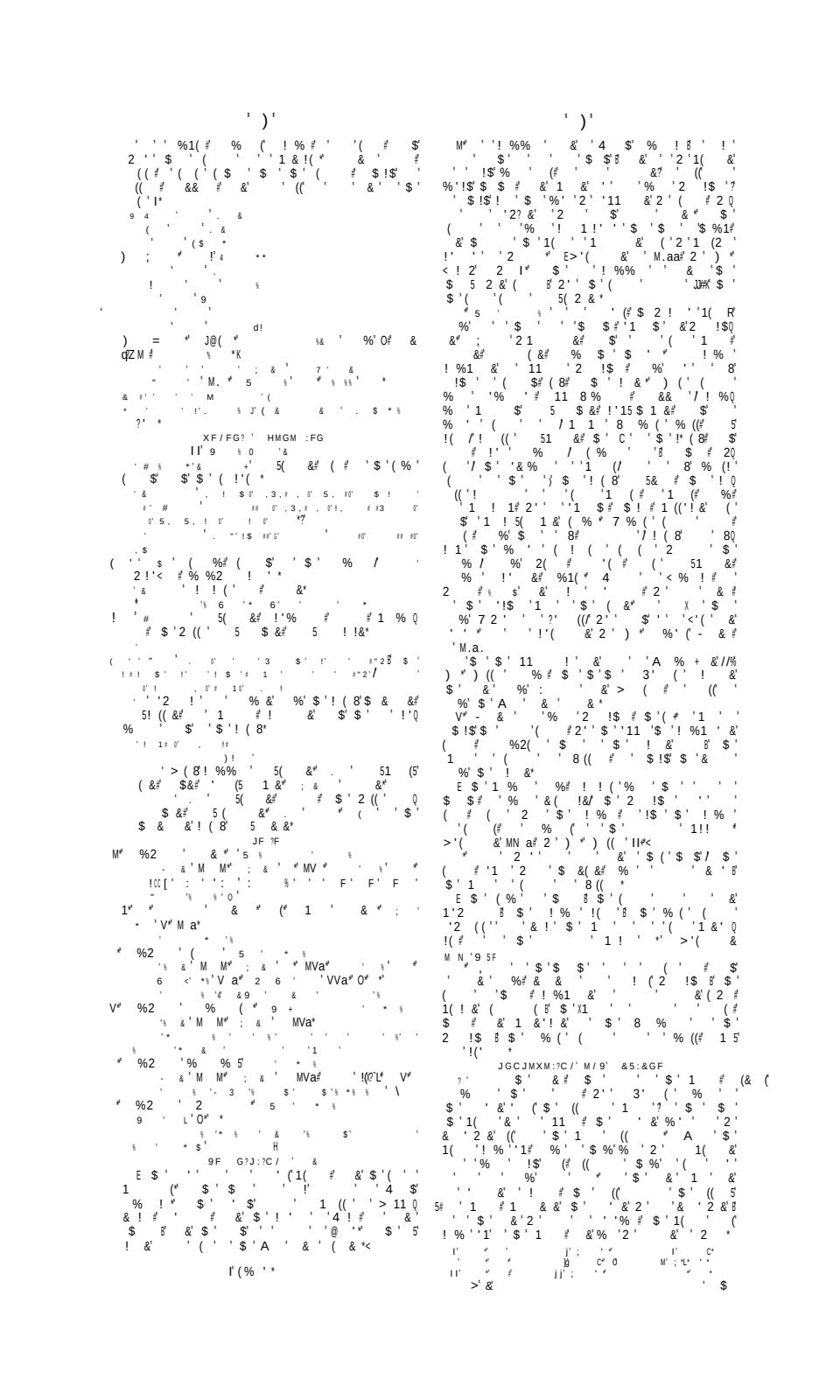

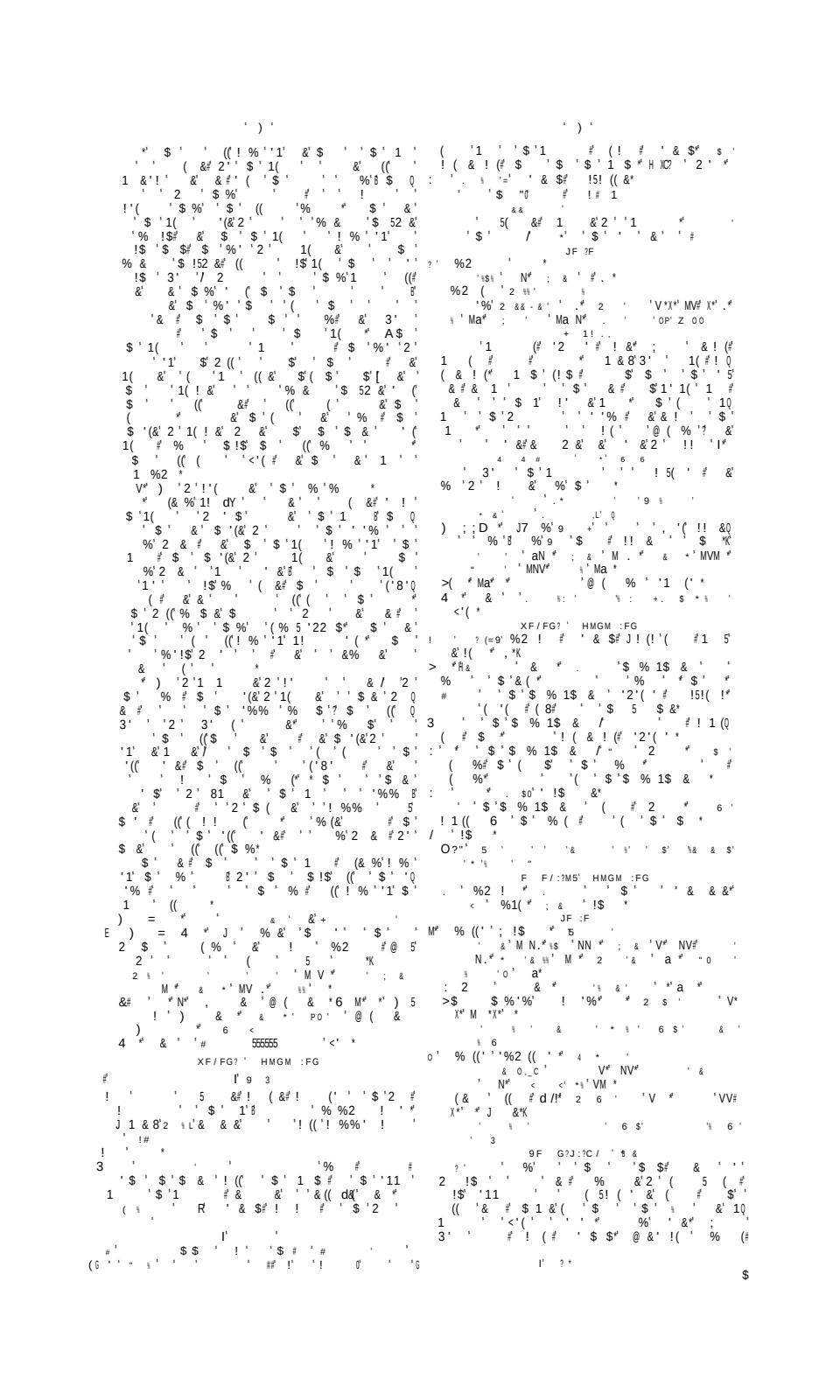

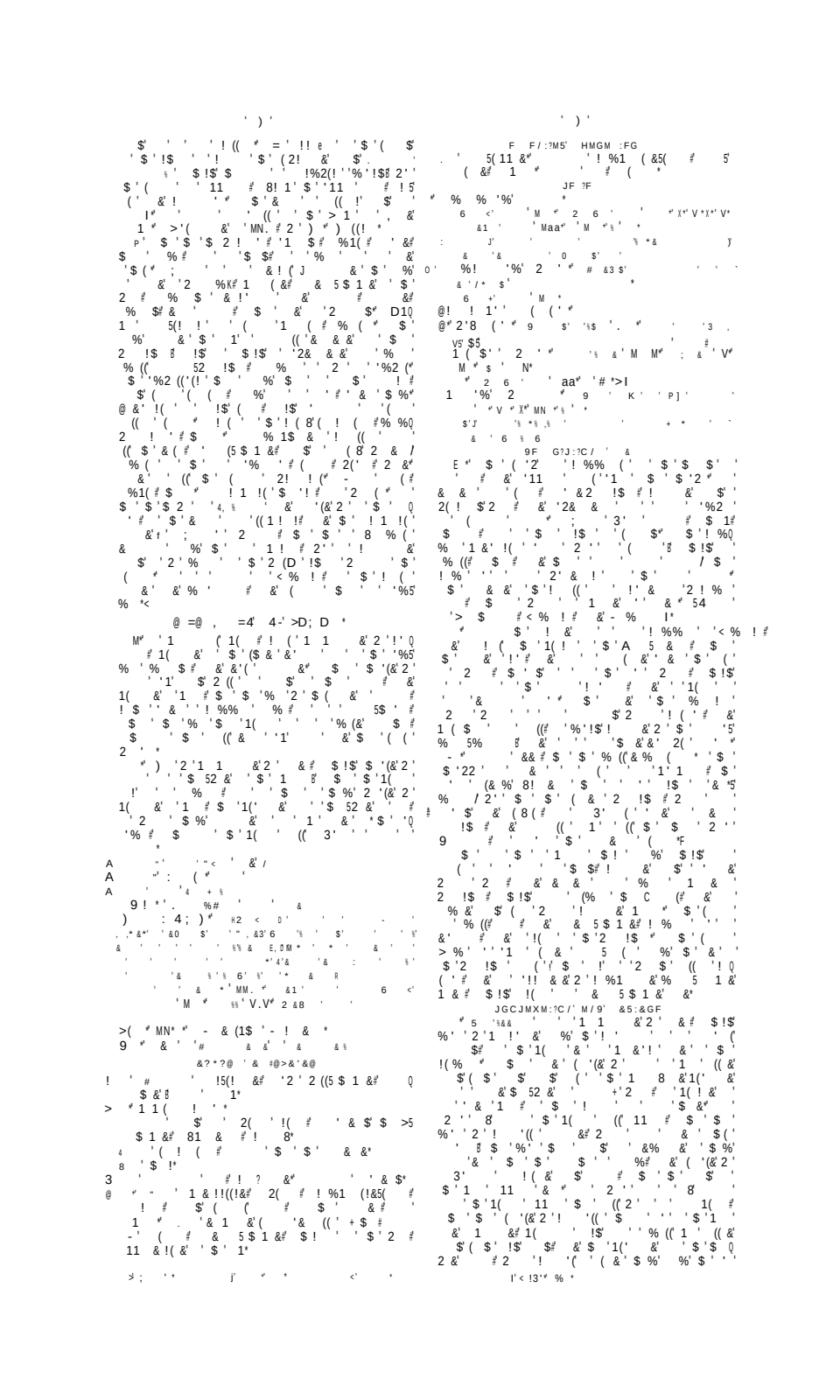

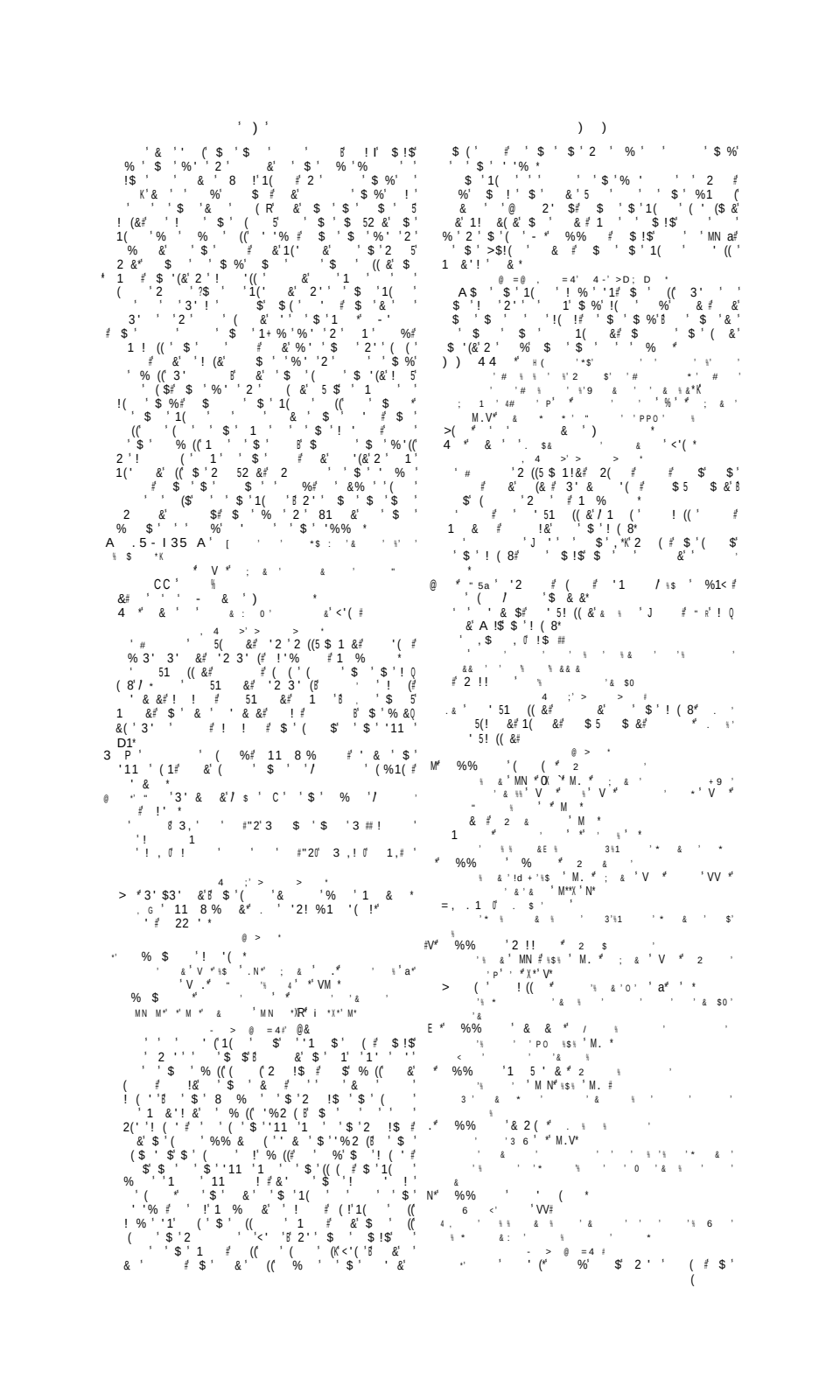

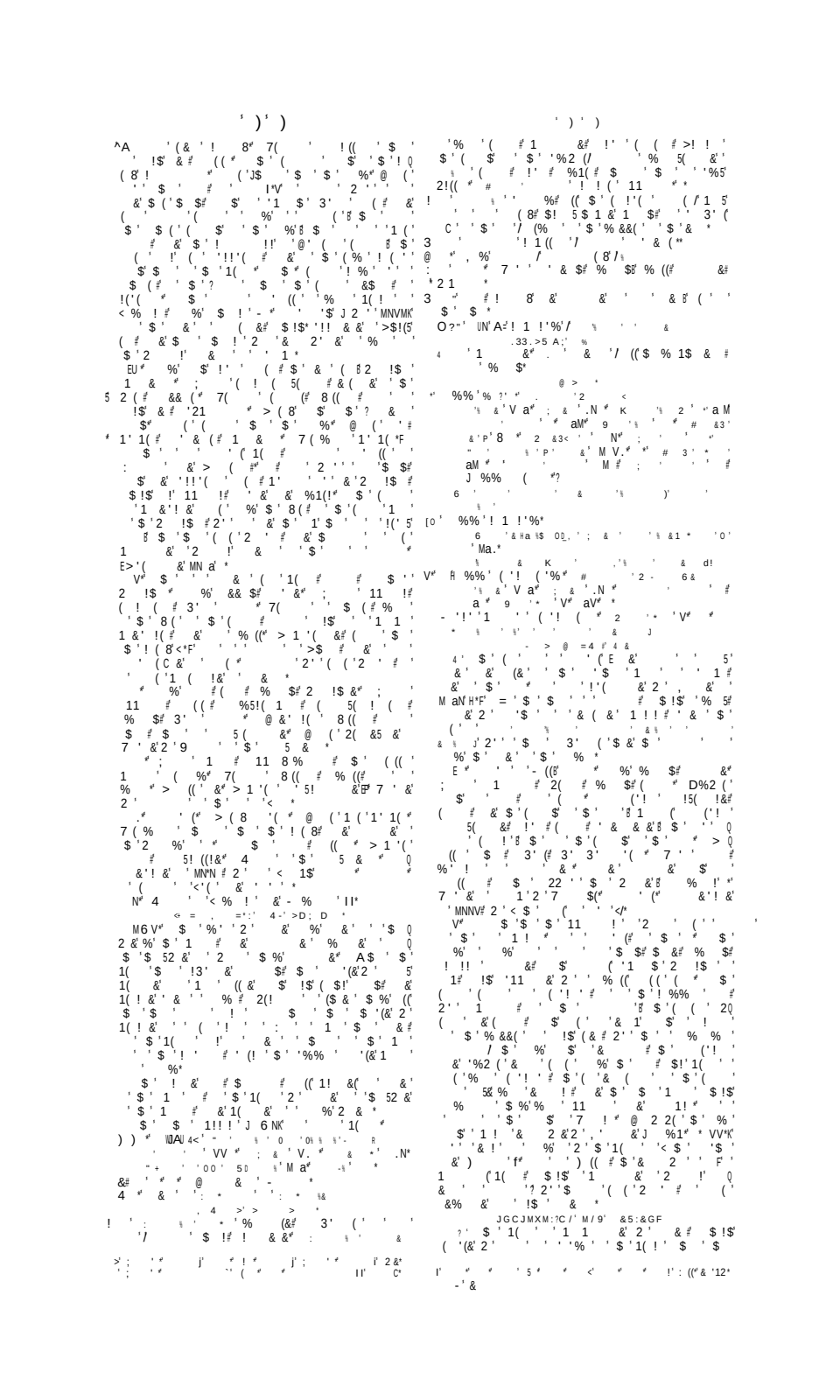

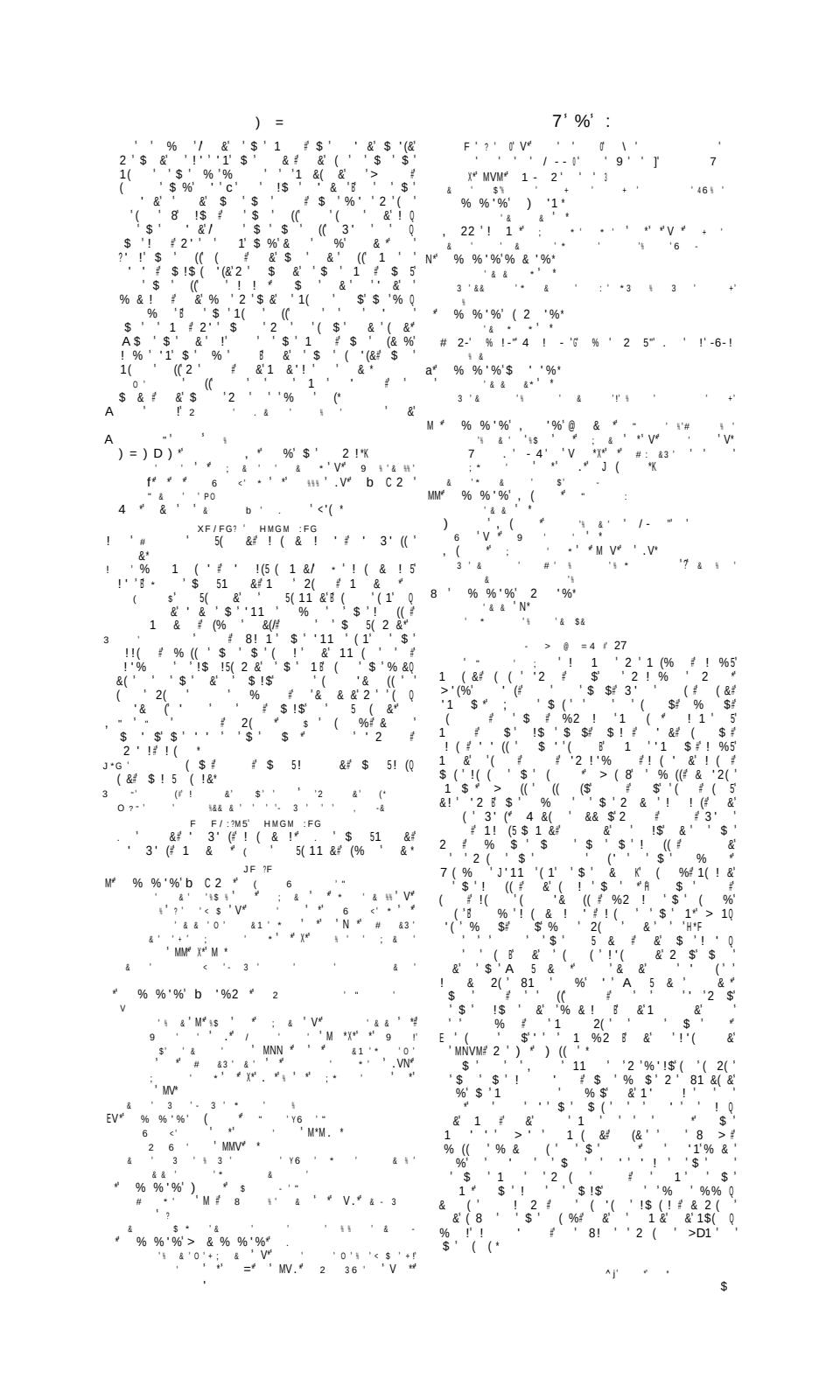

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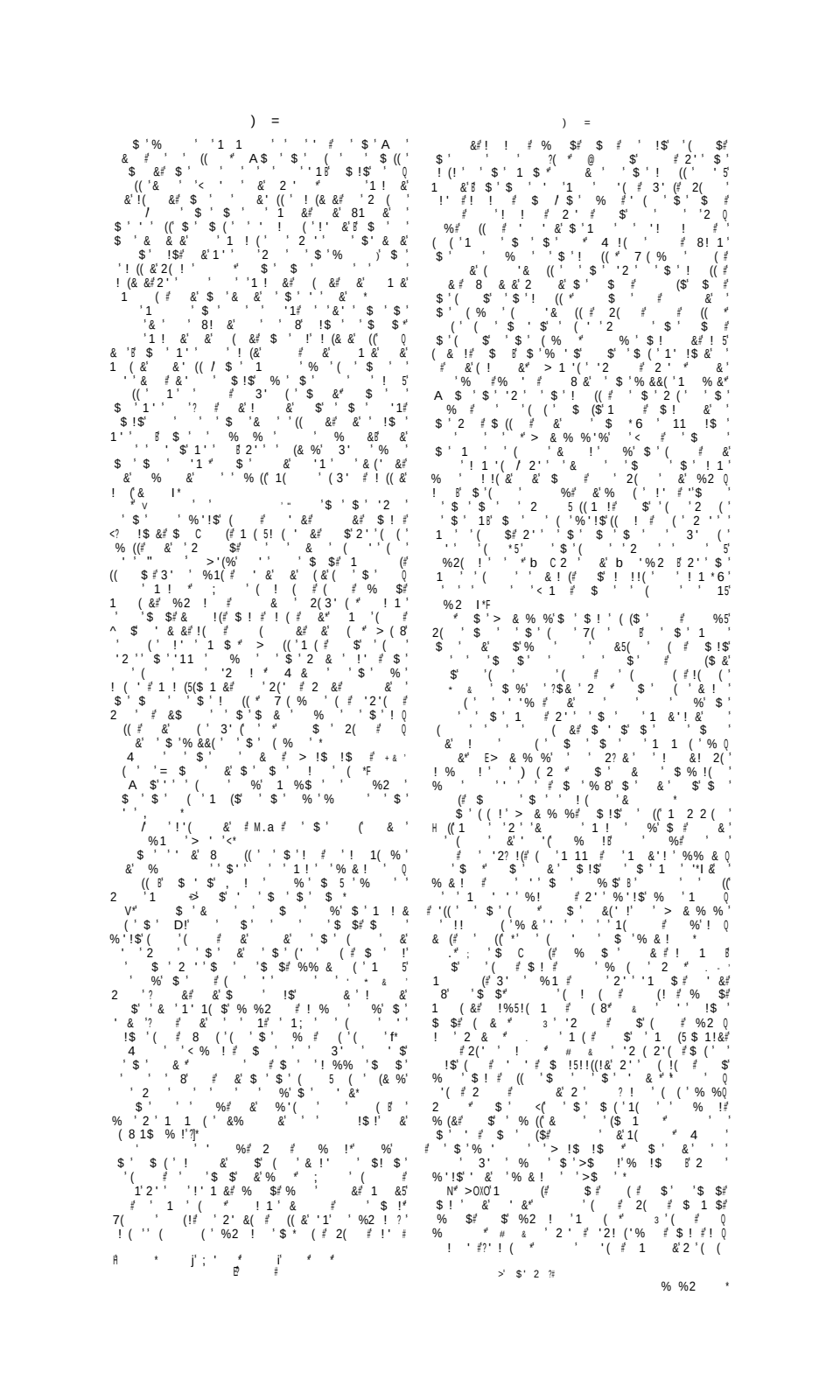

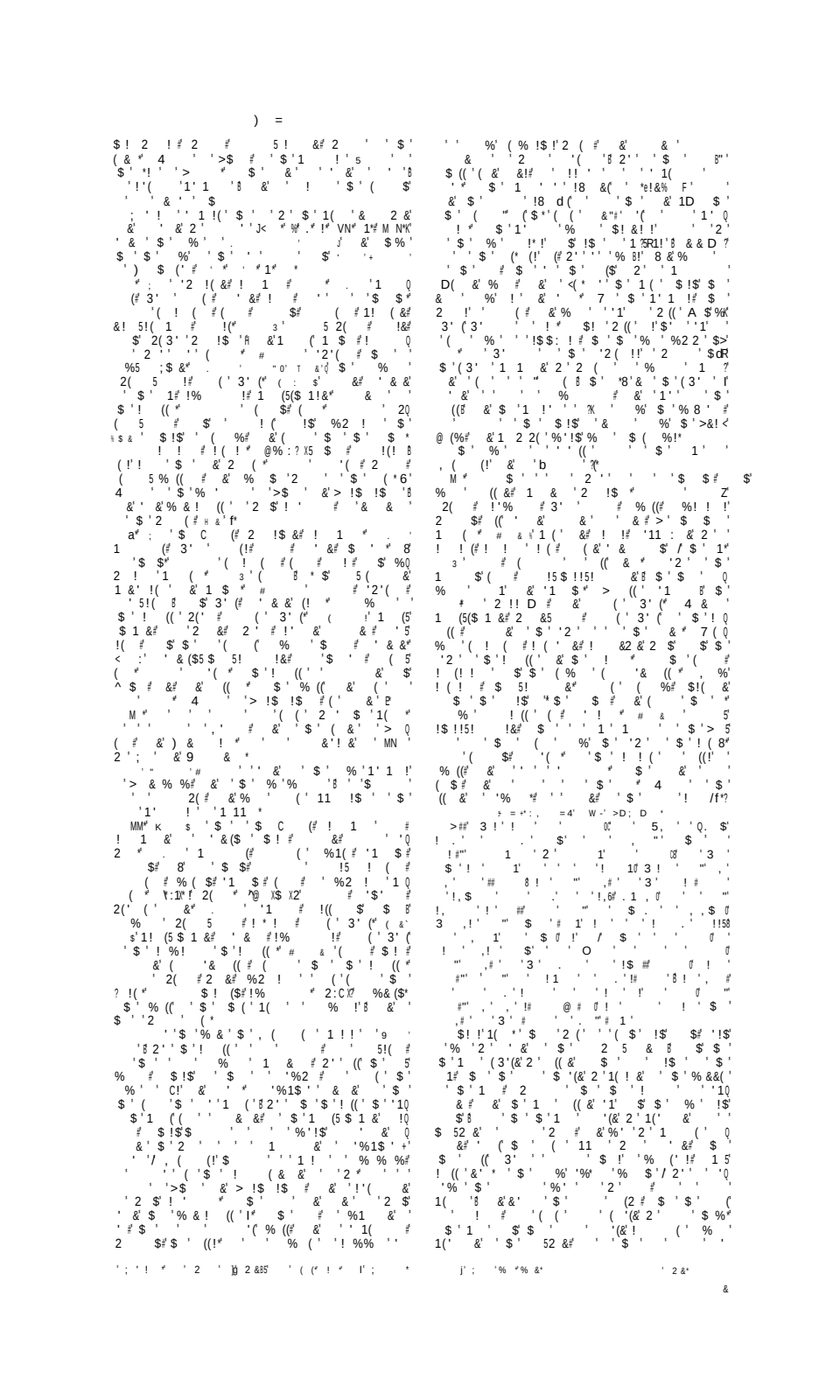

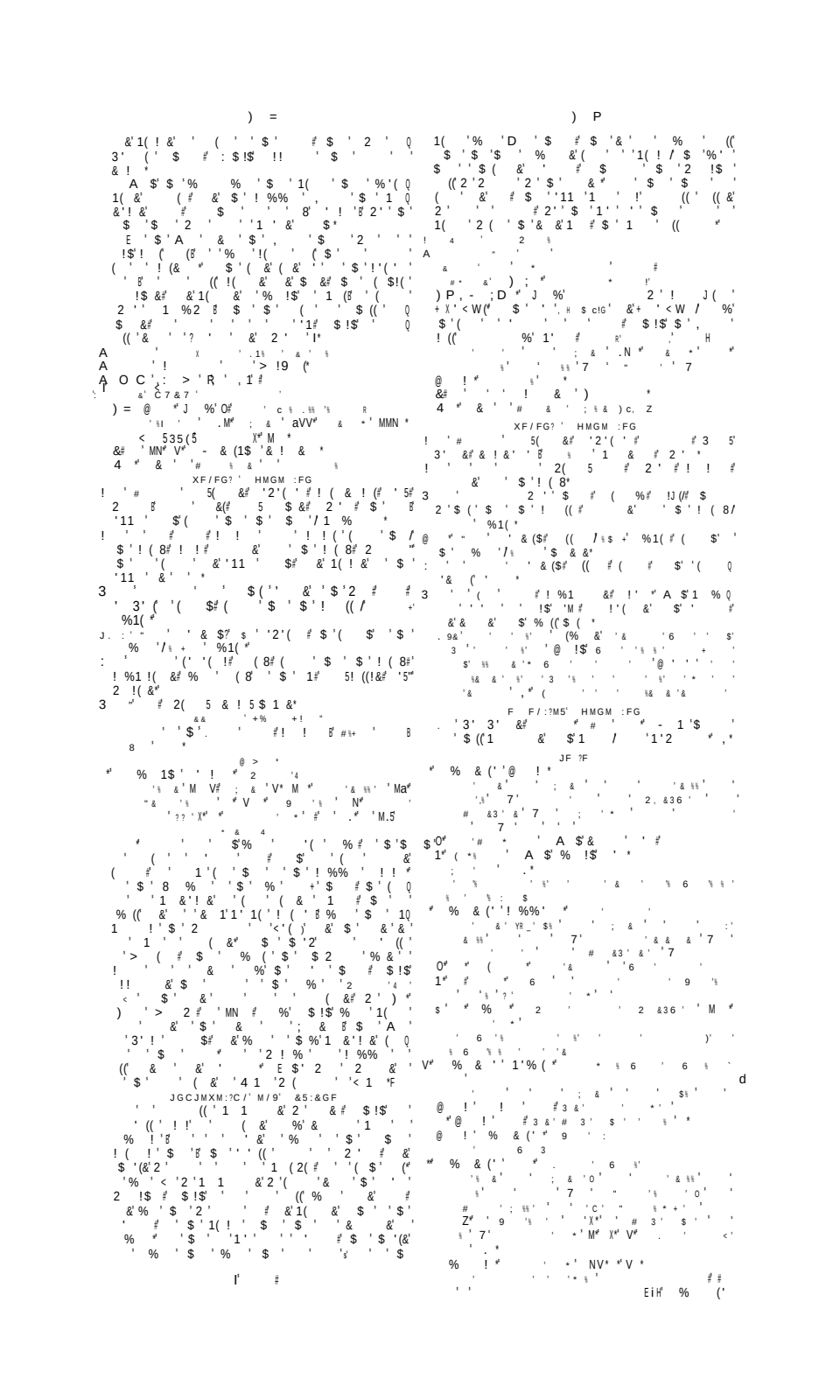

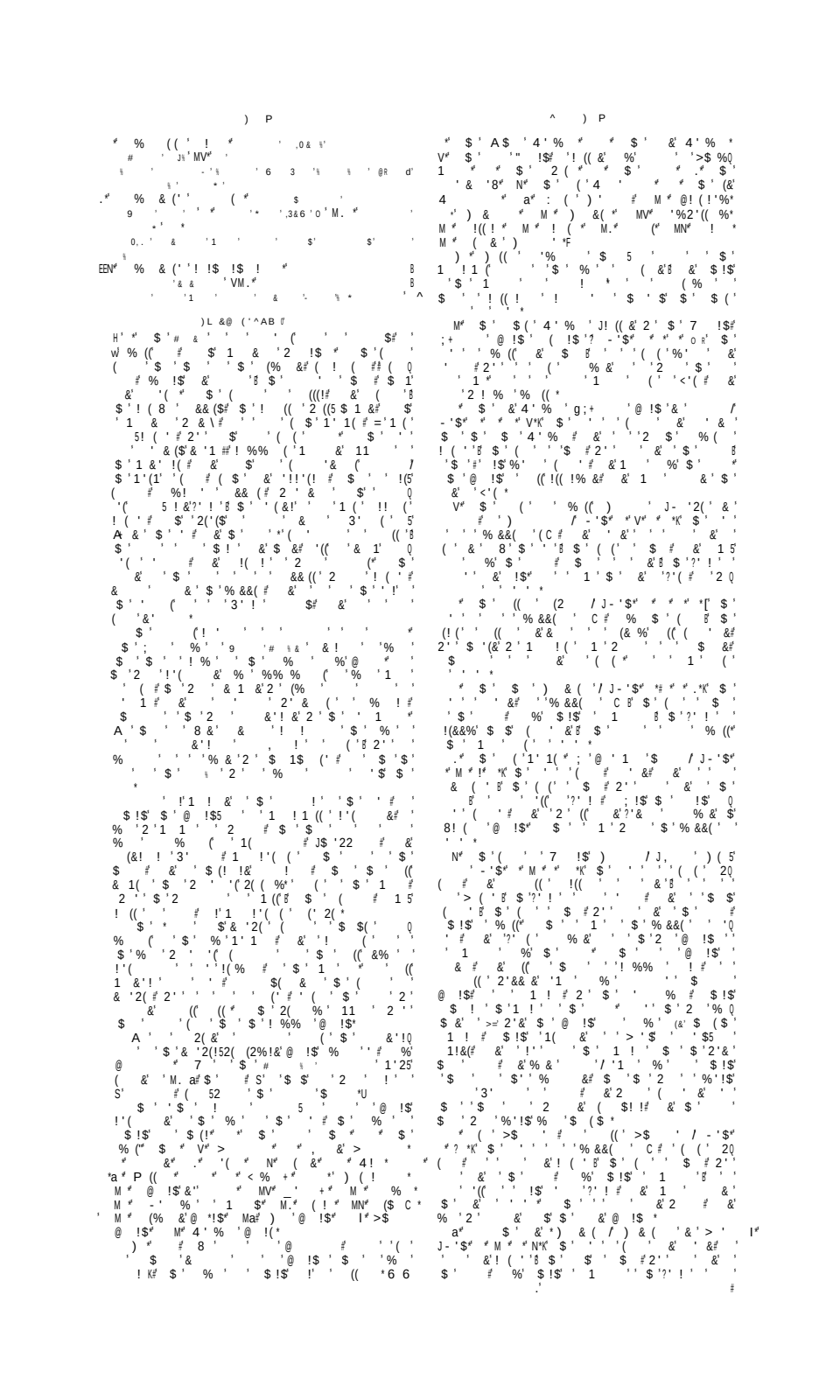

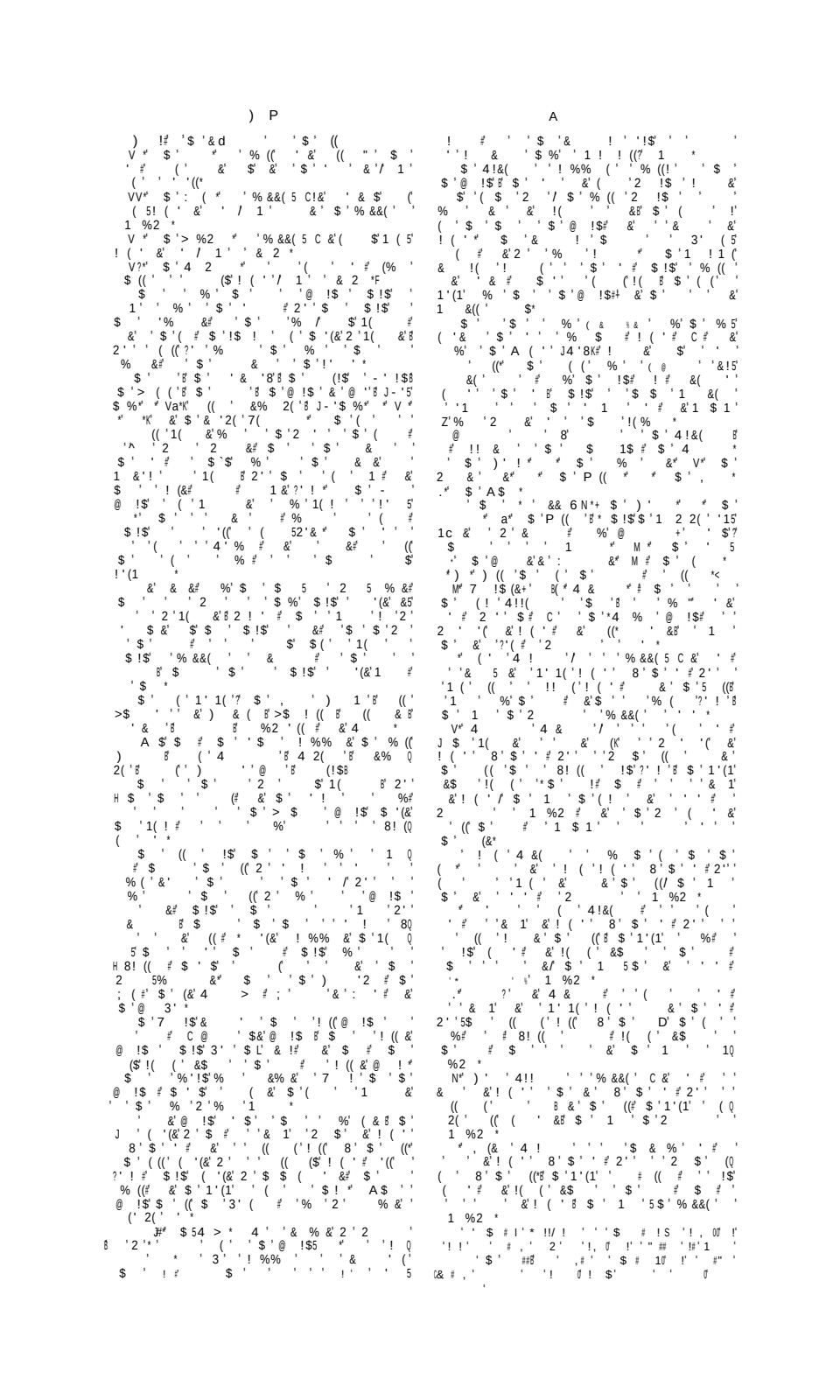

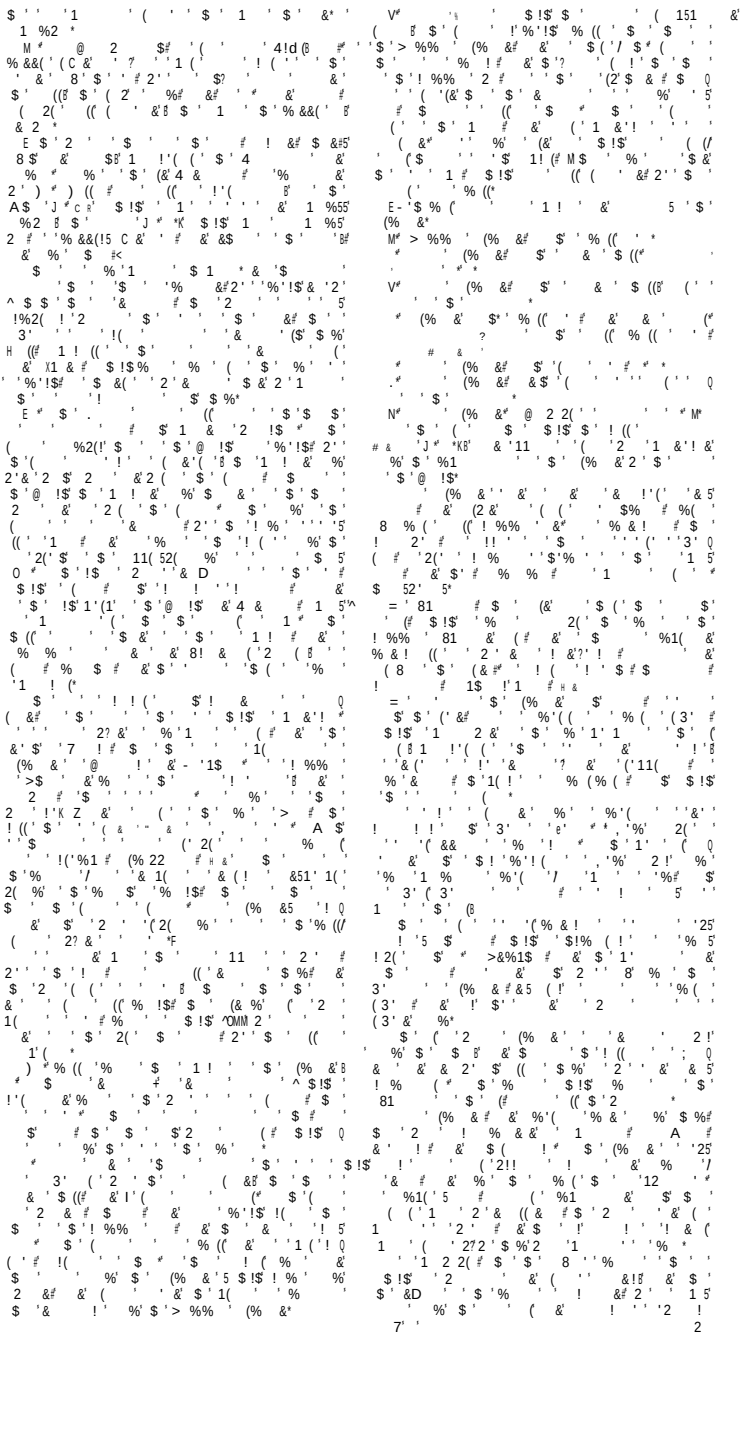

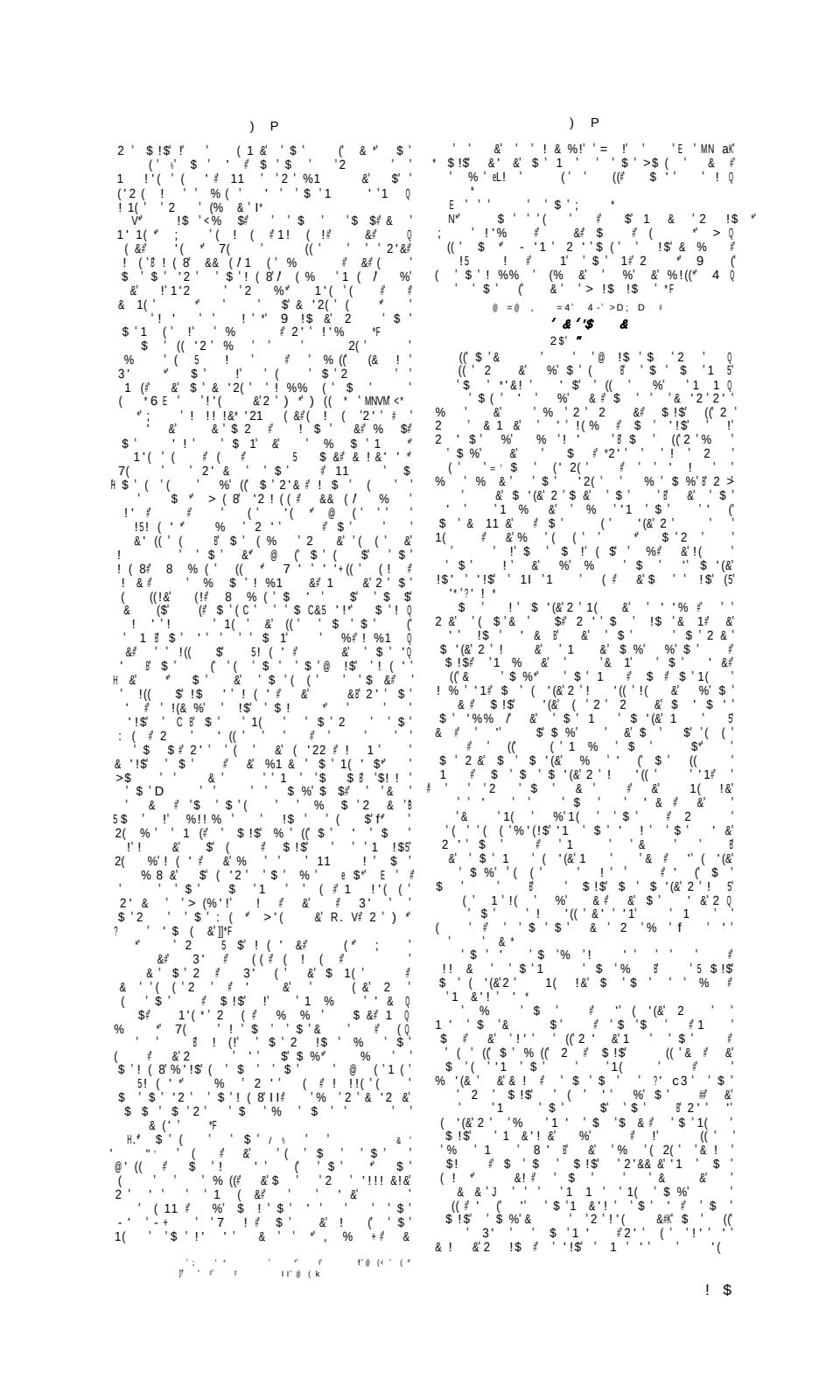

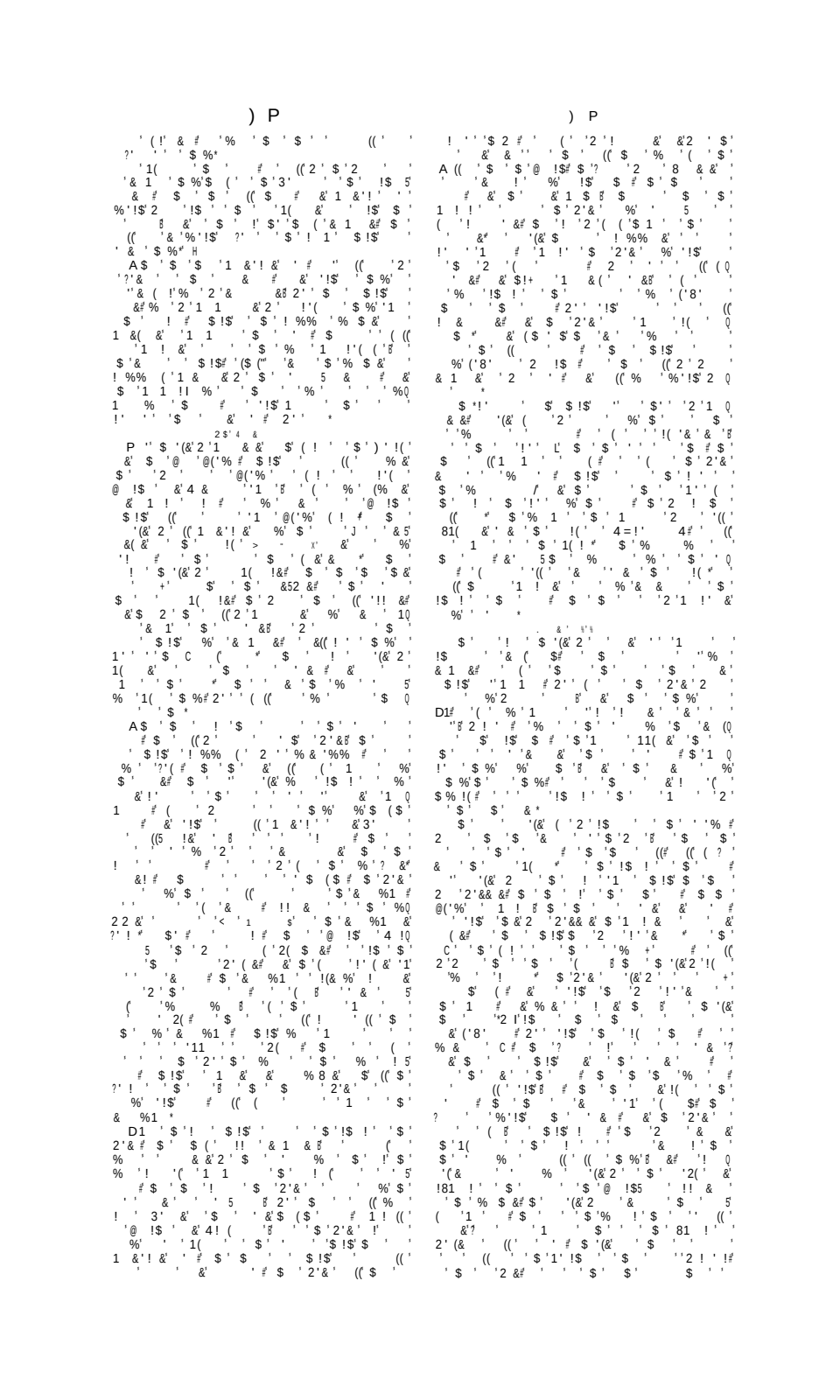

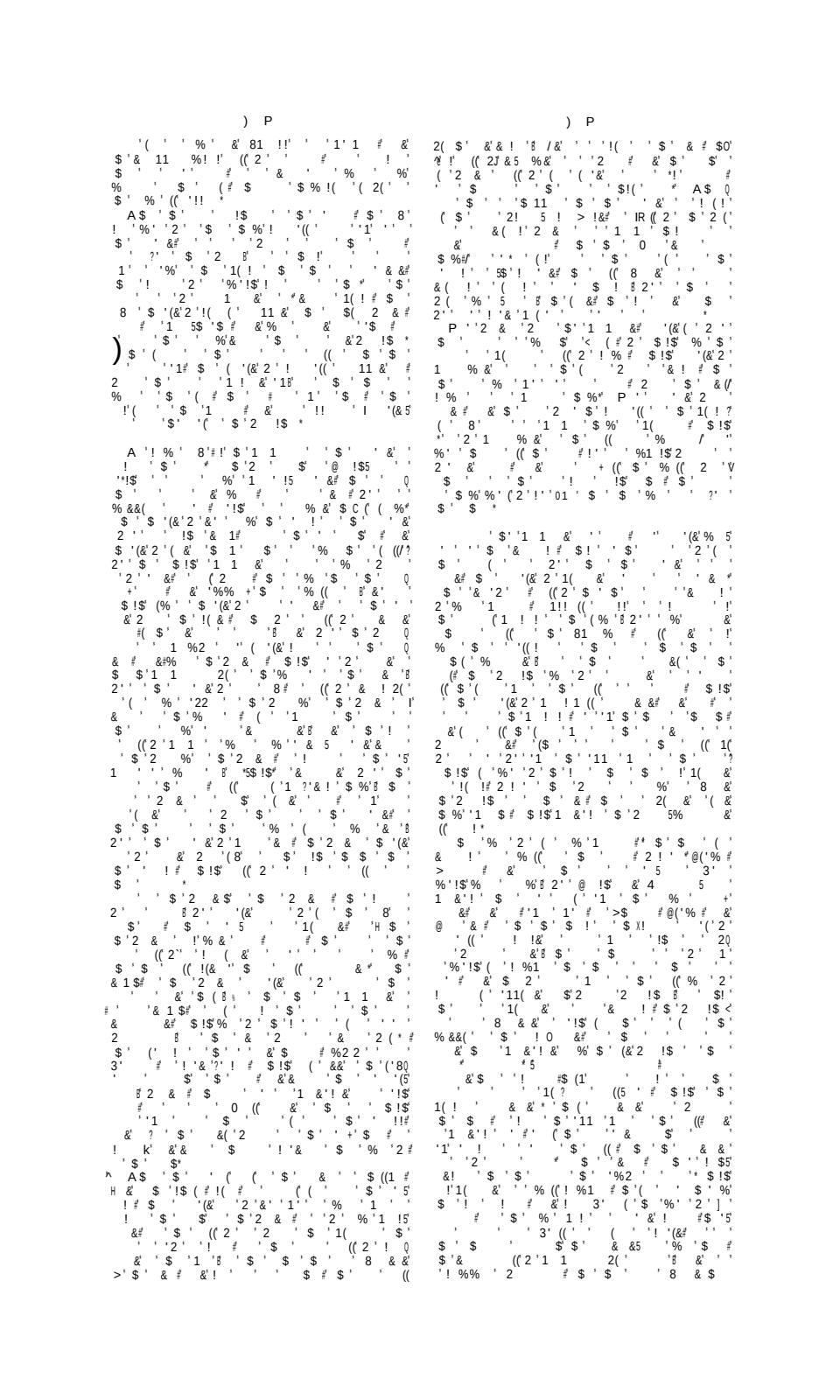

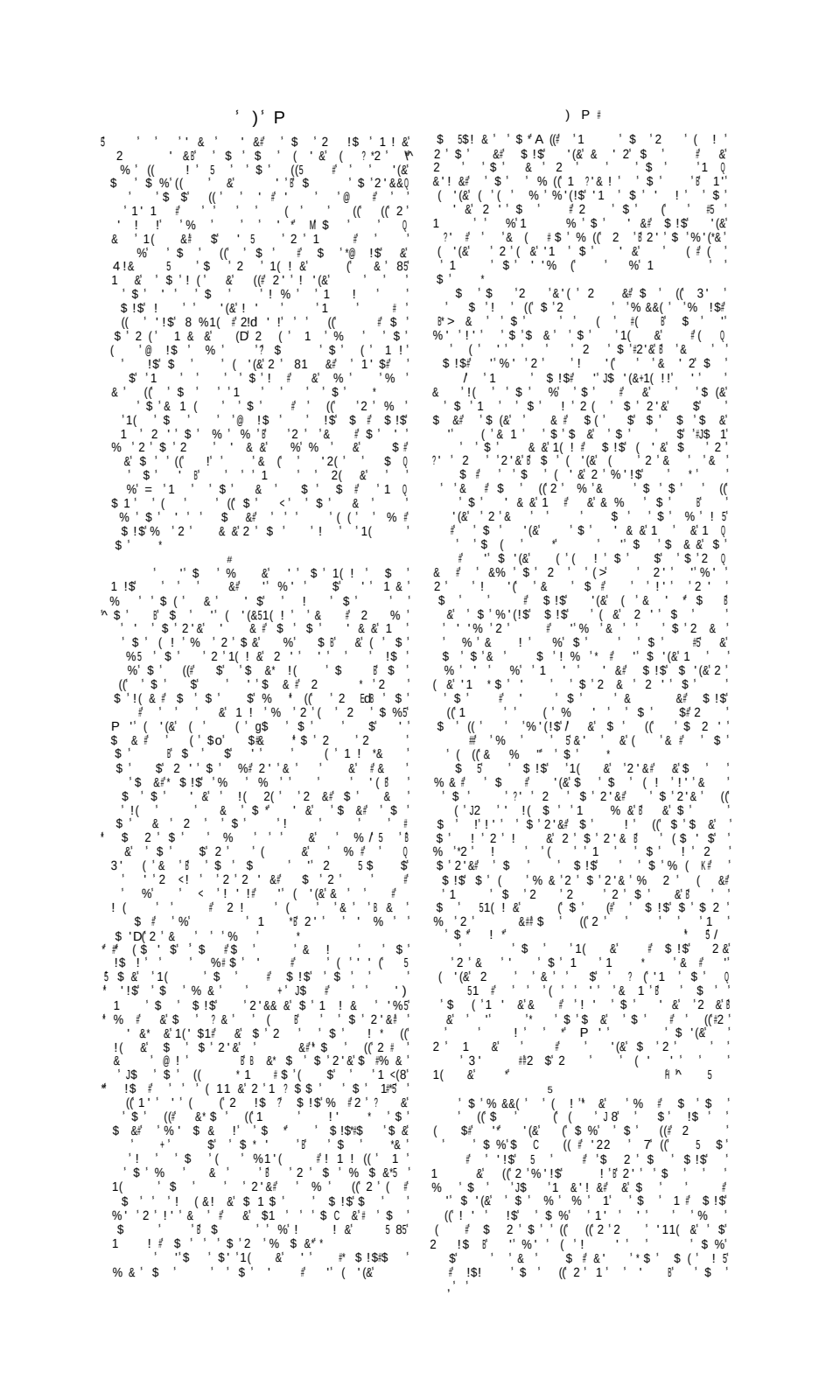

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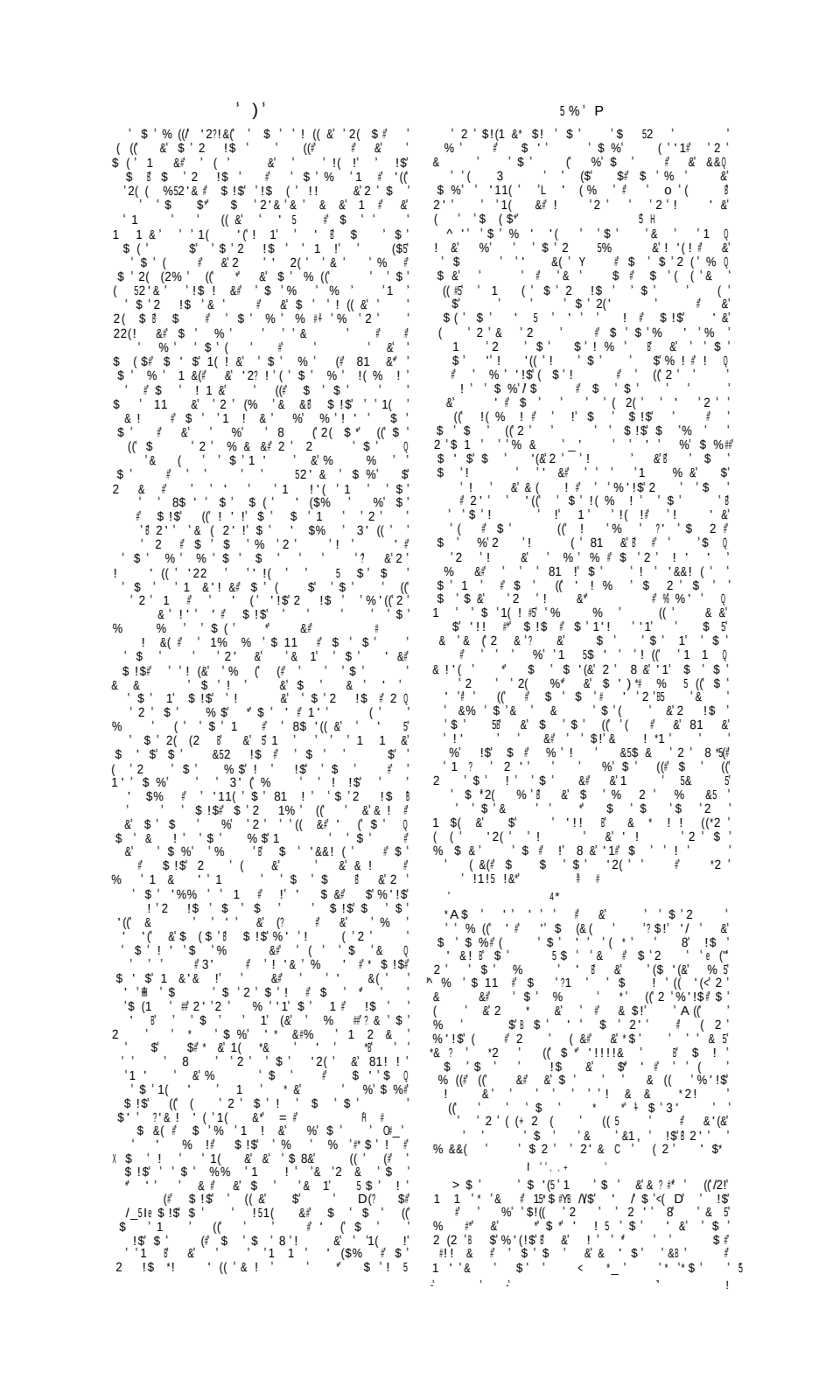

of each tree; or where there is an engine which will diſperſe the water in gentle eaſy drops like rain, if the ſame, or a larger quantity of water be ſprinkled all over the branches of the trees; this, ſoaking down to the roots, will keep the fruit conſtantly growing, which will prevent its falling off the trees, as it generally does where this method is not practiſed; and the fruit being thus conſtantly nouriſhed, will be much better taſted, and hereby the trees will be maintained in vigour; ſo that it is what I can from long experience recommend, as one of the moſt neceſſary things to be practiſed by all lovers of good fruit. But this ſhould not be continued longer than while the fruit is growing, for afterward it will be hurtful to the trees and fruit, for a dry autumn ripens both wood and fruit better than a moiſt later ſeaſon.

When the Peach-trees are carefully managed in the ſpring of the year, according to the rules before laid down, all the nouriſhment which the roots can ſupply will be uſefully employed in the ſupport of ſuch ſhoots only as are to be continued, as alſo the quantity of fruit which is proper for each tree, therefore both muſt of conſequence be rendered better; for where there is not this care, the trees ſoon grow ragged, and are not furniſhed properly with branches; and thoſe ſhoots which are produced, are ſome of them very weak, and others very luxuriant, whereby the trees are rendered very unſightly, as alſo unhealthy, and never continue many years fruitful; and by thus training the branches to the wall as they are produced, the fruit will be always expoſed to the ſun and air; which in the common method of managing theſe trees, by letting their branches grow rude all the ſpring, they are deprived of, and by the timely rubbing off uſeleſs and luxuriant ſhoots, it will ſave much trouble, and prevent the uſe of the knife in ſummer, which is very hurtful to theſe trees, for there will be no need to ſhorten any of the ſhoots in ſummer.

When theſe rules are duly executed, there will be no occaſion to pull off the leaves of the trees, to admit the ſun to the fruit, which is often practiſed; for if we conſider, that the leaves are abſolutely neceſſary to cheriſh the bloſſom-buds, which are always formed at the foot-ſtalks of the leaves, the pulling them off before they have performed the office aſſigned them by nature, is doing great injury to the trees, therefore I caution every one againſt that practice.

It is a common opinion which has for ſome years prevailed, even amongſt perſons of good underſtanding, that Peach-trees are not long lived, therefore ſhould be renewed every twenty years; but this is a great miſtake, for I have eaten ſome of the fineſt Peaches of various kinds, which grew on trees which had been planted above fifty years: and I am convinced by experience, that when the trees are budded upon proper ſtocks, and carefully planted and managed, they may be continued fruitful and healthy fifty years and upward; and the fruit produced on theſe old trees will be much better flavoured, than any of thoſe upon young trees; but I ſuppoſe the foundation of the above opinion was taken from the French, who generally bud their Peaches upon Almond ſtocks, which are of ſhort duration, theſe ſeldom laſting good more than twenty years; but this ſeldom being practiſed in England, the caſe is widely different.

It is a notion among ſome perſons, that laying dung upon borders where fruit trees are growing, will render the fruit ill-taſted. But from long experience I can ſay, that where the beſt fruit grew that I have yet taſted, the ground was conſtantly dunged every other year; therefore it is what I muſt recommend to the practice of every curious perſon, with this caution, always to uſe ſuch dung as is well rotted, and to dig it into the borders in november, that the rain may waſh down the ſalts before the ſpring comes on: and where the ground is very looſe or ſandy, it will be the beſt way to make uſe of neat's dung, which is cooler than that of horſes, but for cold ſtrong land the latter is to be preferred.

If the ground be well trenched every year about the roots, it will be of great ſervice to them; and where the ſoil is ſubject to bind very cloſe, if it is forked two or three times in a year to looſen the ſurface, it will greatly help the trees. The borders ſhould not be crouded with any large growing plants, which will draw away the nouriſhment from the trees; therefore when any ſort of kitchen herbs are planted on theſe borders, they ſhould be only ſuch as are of ſmall growth, and which may be taken off early in the ſpring; and if this be carefully obſerved, the cultivating ſmall things on theſe borders can do no harm, becauſe the ground will be ſtirred the oftener, on account of theſe ſmall crops, than perhaps it would have been, when no uſe was to be made of the borders. Theſe rules which are here laid down, if properly obſerved, will direct any curious perſon how to have plenty of good fruit, as alſo to preſerve the trees in vigour a great number of years.

The culture of the Nectarine differs in nothing from that of the Peach. Only the buds ſhould be taken from bearing trees, and not from young nurſery trees, as is too often practiſed.

2, 3, 4, &c. The common and dwarf Almonds are propagated, by inoculating a bud of theſe trees into a plum, almond or peach ſtock, in the month of july (ſee Inoculation.) The next ſpring, when the buds ſhoot, you may train them up either for ſtandards, or ſuffer them to grow for half ſtandards, according to your own fancy; though the uſual method is to bud them to the height the ſtems are intended to be; and the ſecond year after budding, they may be removed to the places where they are to remain.

[This is the only method by which the ſort can be continued with certainty: but if a variety of fruit be wanted, or ſtocks for budding, they muſt be raiſed from the fruit. In order to which, having procured a quantity of well-ripened Almonds, either ſow them in october or november, or preſerve them in ſand till february or march. The ſeminary ſhould be in a good light ſoil, and the ſtones ſhould be put in two inches deep, in rows a foot diſtant from each other. When they are two years old, plant them out in the nurſery, in rows three feet wide, and eighteen inches aſunder in the rows. Train them with ſingle ſtems, from five to eight feet in height, by pruning off all the ſide ſhoots; then top them with your knife at the proper height, to force out a ſet of branches in order to give the head its firſt regular form, letting them afterwards branch out in their own way: but if they be intended as ſtocks for budding, they muſt not be headed, but trained ſtraight up till after the budding is performed.]

The beſt ſeaſon for tranſplanting theſe trees, if for dry ground, is in october, as ſoon as the leaves begin to decay; but for a wet ſoil, february is much preferable; and obſerve always to bud upon plum ſtocks for wet ground, and upon thoſe of almonds and peaches for dry.

The third ſort may be budded upon almond ſtocks, or propagated by layers; it will alſo take upon plum ſtocks, but theſe are very apt to canker after they have ſtood four or five years, eſpecially that with double flowers, which is more tender than the other; and this ſends out ſuckers from the roots, whereby it may be propagated in great plenty.

The fourth ſort is common in the nurſeries about London, being cultivated with other flowering ſhrubs. The roots are very apt to put out ſuckers, by which it may be increaſed in plenty; but if theſe be not annually taken away, they will ſtarve the old plants. Theſe ſuckers being very apt to creep at the root, and put out other ſuckers, plants which are propagated by layers are much preferable.

This is frequently confounded with the third, but whoever compares the leaves, ſhoots or flowers, will ſoon be convinced of their difference.

AMYGDALUS ÆTHIOPICA. See *Brabeium*.
AMYGDALUS INDICA. See *Terminalia*.
[AMYRIS. (From α *intenſive*, and μυρον, *ointment* or *balm*.)
*Brown. Lin. gen. n.* 473. *Reich.* 516. *Schreb.* 650. *Jacqu. amer.* 107. *Juſſ.* 371.
Claſſ. 8. 1. Octandria Monogynia.
Nat. order of *Terebintaceæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leaſed, four-toothed, acute, erect, ſmall, permanent.
COR. of four, oblong, concave, ſpreading *Petals*.
STAM. *Filaments* awl-ſhaped, erect. *Anthers* oblong, erect, the length of the corolla.
PIST. *Germ* ſuperior, ovate; *ſtyle* thickiſh, the length of the ſtamens; *ſtigma* four-cornered.
PER. a drupaceous, roundiſh *berry*.
SEED a round, ſhining *nut*.
OBS. A. Protium *differs in ſome parts*.

ESSENTIAL CHARACTER.

*Cal.* four-toothed. *Pet.* four, oblong. *Stigma* four-cornered. *Berry* drupaceous.

SPECIES.

1. Amyris elemifera. *Gum Elemi tree.*
*Lin. ſpec.* 495. *ſyſt.* 361. *Reich.* 2. 158. *hort. cliff.* 486. 1. *mat. med.* 101. *Plenck. ic. t.* 297.
Comus. *Phyt. ſt.* 100.
Icicariba. *Marcgr. braſ.* 98. *f.* 2.
Frutex trifolius, &c. *Catesby car.* 2. *t.* 33. *f.* 3.
*Leaves ternate, and pinnate with five lobes, downy underneath.*
2. Amyris ſylvatica.
*Lin. ſyſt.* 361. *Reich.* 2. 158. *Jacq. amer.* 107. *& amer. pict. p.* 55. *t.* 108.
*Leaves ternate, crenate, acute.*
3. Amyris maritima. *Small ſhrubby Sweet-wood.*
*Lin. ſpec.* 496. *ſyſt.* 361. *Reich* 2. 158. *Swartz obſ.* 148. *Jacq. amer.* 107. *pict. p.* 55. *Brown. jam.* 203. *Sloan. jam.* 2. 101. *Raii hiſt. ſuppl.* 60.
*Leaves ternate, crenulate, obtuſe.*
4. Amyris gileadenſis. *Balſam of Gilead tree.*
*Lin. ſpec.* 361. *mant.* 65. *Reich.* 2. 158. *Amœn. acad.* 7. *p.* 68. *Forſk. ægypt. p.* 78. *Woodv.* 521. *t.* 192. *Bruce's trav. app. p.* 16.
*Leaves ternate, quite entire; peduncles one-flowered, lateral.*
5. Amyris Opobalſamum. *Balſam of Mecca tree.*
*Lin. ſyſt.* 361. *Reich.* 2. 159. *mat. med.* 101. *mant.* 65. *amœn. acad.* 7. *p.* 55, &c. *Forſk. ægypt.* 79.
Balſamum. *Bellon. itin.* 110. *Alp. ægypt. edit.* 1. 20. *t.* 24. *edit.* 2. 48. *t.* 60. *edit.* 3. 26. *t.* 14.
Opobalſamum, ſ. Balſamum judaicum. *Geoffr. mat.* 2. *p.* 473.
*Leaves pinnate, leaflets ſeſſile.*
6. Amyris toxifera. *Poiſon Aſh.*
*Lin. ſpec.* 496. *Reich.* 2. 159.
Elemifera. *Lin. hort. cliff.* 486. 2.
Toxicodendron. *Catesb. car.* 1. *t.* 40. *Mill. dict. n.* 4.
*Leaves pinnate; leaflets petiolate, plane.*
7. Amyris Protium.
*Lin. ſyſt.* 361. *Reich.* 2. 159. *mant.* 65.
Protium javanicum. *Burm. ind.* 88.
Tingulong. *Rumph. amb.* 7. *p.* 54. *t.* 23. *f.* 1.
*Leaves pinnate, leaflets petiolate, waved.*
8. Amyris ambrofiaca.
*Lin. ſyſt.* 361. *ſuppl. p.* 216. *Lour. cochinch.* 230?
Icica heptaphylla. *Aubl. guian.* 1. 337. *t.* 130.
*Leaves pinnate, petiolate, panicles crowded, axillary.*
9. Amyris balſamifera. *Sweet Amyris. White Candle wood* or *Roſe wood.*
*Lin. ſpec.* 496. *Reich.* 2. 159. *Brown. jam.* 208.
Lucinium. *Plum. alm. t.* 201. *f.* 3.
*Leaves two-paired.*

DESCRIPTIONS, &c.

1. Height about ſix feet. Leaflets pointed, ſtiff and ſhining; leaves oppoſite on peduncles two inches long. At the ends of the branches grow four or five ſlender ſtalks ſet with many very ſmall white flowers[a]; in a little corymb. Petals inflex at the tip[b].

Marcgraaff deſcribes it as a lofty tree, with a ſmall trunk, covered with a ſmooth gray bark; growing almoſt in the manner of a beech-tree. Leaves ſometimes ternate, ſometimes pinnate with two pairs and a terminating leaflet, and ſometimes with two terminating leaflets; theſe reſemble the leaves of the pear-tree, are three inches long, ſtiff like parchment, bright green, ſhining, acuminate, having one nerve running longitudinally, and ſeveral veins diſpoſed obliquely. The flowers come out very cloſe together at the axils of the leaves. The fruit is the ſize and figure of an olive, and the colour of a pomegranate, having an odoriferous pulp within it.

*Gummi Elemi* is a reſin from this tree, brought over in oblong roundiſh cakes, generally wrapped up in flag leaves. The beſt ſort is ſoftiſh, ſomewhat tranſparent, of a pale whitiſh yellow colour, inclining a little to greeniſh. This reſin is only uſed as an ingredient in a digeſtive ointment called *Unguentum Elemi*, which is made from one pound of Gum Elemi, ten ounces of Turpentine, two pounds of prepared Mutton Suet, and two ounces of Oil of Olives[c]. Native of Carolina and Brazil.

2. A Shrub erect, leafy, branching but little, from two to fifteen feet high, according to the ſoil and ſituation. The whole abounds in turpentine of a ſtrong diſagreeable ſmell. The ſmall branches are round, leafy to the ends: the leaflets ſhining, finely notched, two inches long, of different ſhapes, ovate, lanceolate, cordate-ovate, or rhombed. Racemes panicled, erect, terminal and axillary, ſuſtaining many ſmall flowers with ſnow-white petals. The drupe is the ſize of a pea, red with red juice: it is permanent, and becomes leathery in drying. Gum Elemi has erroneouſly been ſuppoſed to be yielded by this plant. Found plentifully about Carthagena, in woods near the ſea. Flowering in auguſt[d].

3. A Dwarf Shrub, branching, with a juice like that of the former, but pleaſanter, and ſmelling like Rue. Leaflets ſhining, ovate, finely notched, ſcarce an inch long. Racemes as in the former. Fruits twice as big, black, with a purple juice. Whether a variety of ſoil can have occaſioned theſe differences I know not, but it is always found about the Havannah, on rocks by the ſea-ſide[e].

It is thus deſcribed by Swartz. Stem branched, ſcabrous, aſh-coloured. Leaves petioled, ternate: leaflets petioled, roundiſh-elliptic, with a ſhort point, ſometimes obtuſe, crenate, ſpreading, nerved, ſmooth on both ſides, perforated with pellucid dots. Petioles and petiolules round. Racemes compound, in cymes, with oppoſite, many-flowered branchlets. Flowers crowded, white, very ſweet. Petals ovate, entire, with ſhort claws. Berry the ſize of black Pepper, black when ripe; including a globular brittle nut, in which is a white kernel.

Swartz doubts whether the foregoing be a diſtinct ſpecies from this, which differs according to the ſoil and ſituation in the ſize of all the parts.

It grows in very barren coppices, in a calcareous rocky ſoil, both near the ſea, and on the interior mountains of Jamaica, Hiſpaniola and Cuba; flowering from june to ſeptember[f].

4. The Balſam of Gilead tree is a ſhrub with purpliſh branches, ſtriated a little, having protuberant buds loaded with balſamic reſin. Leaves crowded, petioled, ternate, ſmooth; leaflets ſeſſile, quite entire, lanceolate, ſomewhat acute, that at the end larger than the others, wedge-lanceolate. Flowers from the ſame buds, by threes. Proper peduncles one-flowered, ſhorter than the leaf, ſheathed at bottom. Bracte extremely minute, ſlightly biffid. This therefore is different from the firſt and third ſpecies, which have crenate leaves, whereat in this they are quite entire[g]. But whether it be diſtinct from the next ſpecies, or *A. Opobalſamum*, may be doubted;

[a] Catesby. [b] Lin. cliff. [c] Lewis and Pharm. Lond.
[d] Jacquin. [e] Ibid. [f] Swartz obſ. [g] Lin. amœn.





for

for the number of leaflets varies much in the firſt ſpecies; as it does alſo in Alpinus's figure, which Linnæus refers to the *Opobalſamum*; and in that of Mr. Bruce.

5. The true Opobalſamum, according to Proſper Alpinus, is at firſt turbid and white, of a very ſtrong pungent ſmell, like that of turpentine; but much ſweeter and more fragrant, like Mint, varying according to its goodneſs[b], and of a bitter, acrid, aſtringent taſte: on being kept it becomes thin, limpid, light, of a greeniſh hue, and then of a gold colour; after which, it grows thick, like turpentine, and loſes much of its fragrance. A curious balſam is ſometimes met with, ſmelling like a mixture of roſemary and ſage flowers, exceedingly fragrant, limpid and thin: dropt on water, it ſpreads itſelf all over the ſurface, imparting to the liquor a conſiderable ſhare of its taſte and ſmell: the groſſer part, that remains on the top of the water, is ſo tenacious, as to be eaſily taken up at once with the point of a needle, which is reckoned a characteriſtic of the true balſam[i]. This ſeems to be the ſame with that which Bergius ſays he has had from England, under the name of Balſam of Gilead.

Gerlach (as quoted by Bergius) relates, that the trees which produce the Opobalſamum or balſam of Mecca, grow near Bederhumin, a village between Mecca and Medina, in a ſandy rocky ſoil, confined to a ſmall tract, about a mile in length. In the beginning of april, the trees drop their juice from gaſhes which are made in the ſmaller branches, into veſſels ſet under them to receive it. A gaſh does not yield above three or four drops in a day, weighing about a drachm; nor will even the beſt trees yield more upon the whole in a ſeaſon than from ten to fifteen drachms.* The inhabitants uſe it as a ſudorific, particularly in the rheumatiſm: but it is adulterated upon the ſpot.

Lady Mary Wortley Montague informs us, that the balm of Mecca, of the beſt quality, is not eaſy to be got, even at Conſtantinople: that applying ſome of it to her face, it became ſwelled and red during three days, but that her complexion was much mended by the operation: and that the ladies all uſe it at Conſtantinople, and have the loveliеſt bloom in the world*.

Its great ſcarcity has prevented its coming into uſe among us: nor are its virtues, probably, ſuperior to thoſe of ſome of the reſinous juices more common in the ſhops; all theſe ſubſtances being in their general qualities alike, though differing in the degree of their gratefulneſs, pungency and warmth[k].

An inferior ſort of Balſam is prepared from boiling the young twigs and leaves gently, in a large quantity of water; the balſamic matter riſes to the ſurface, which is ſkimmed off. After they have thus procured all they can, it is ſaid that they puſh the fire, and a large quantity of thicker balſam like turpentine riſes, which is preſerved by itſelf, and is that principally which we have in Europe. The other can only be obtained by preſents; and that which diſtils naturally from the trees, ſcarcely ſupplying the ſeraglio and great officers, there is none of it ſent out of the country.

Haſſelquiſt deſcribes the true Balſam of Mecca, as being yellow and pellucid, with a moſt fragrant reſinous balſamic ſmell; as being very tenacious, and drawing out into long threads: that it is taken to three grains to ſtrengthen a weak ſtomach, and that it is a moſt excellent remedy for wounds. To know whether it be adulterated, they drop ſome into a glaſs of water; if it remain ſtill on the ſurface, it is of little value; but if it inſtantly extend itſelf over the whole ſurface, and may be taken off the water with a hair, ſilk or thread, it is then of the beſt kind. The drugs uſed to adulterate this balſam, are oil of Seſamum, Cyprus turpentine, and Oſtrich fat.

[b] Bergius. [i] Lewis. [k] Lettres a. 35. [l] Lewis.

Mr. Bruce has given two figures of the Balſam tree; one of the whole tree, the other a ſingle branch with the diſſection of the fruit. Theſe he ſays may be depended on, as being carefully drawn, after an exact examination, from two very fine trees brought from Beder Hunein. One of theſe was five feet two inches high from where the red root begins, or which was buried in the earth, to where it divides itſelf firſt into branches. The trunk at thickeſt was about five inches diameter, the wood light and open, and incapable of being poliſhed, covered with a ſmooth bark of bluiſh white, like a ſtandard cherry-tree in good health, which has not above half that diameter; inſteed a part of the bark is a reddiſh brown; it flattens at top like trees that are expoſed to ſnow blaſts or ſea air, which gives it a ſtunted appearance. It is remarkable for a penury of leaves. The flowers are like thoſe of the Acacia tree, white and round, only that three hang upon three filaments or ſtalks, where the Acacia has but one. Two of theſe flowers fall off and leave a ſingle fruit; the branches that bear this are the ſhoots of the preſent year; they are of a reddiſh colour, and tougher than the old wood; it is theſe that are cut off and put into little faggots, and ſent to Veniſe for the Theriaca, when bruiſed or drawn by fire, and formerly theſe made the Xylobalſamum.

The great value ſet upon this drug in the eaſt remounts to very early ages. We know from ſcripture, that the Iſhmaelites, or Arabian carriers and merchants, trafficking with Indian commodities to Egypt, brought with them balm as part of the cargo.

Strabo alone of all the ancients, has given us a true account of the place of its origin. "Near to this, ſays he, is the moſt happy land of the Sabeans, and they are a very great people. Among theſe frankincenſe, myrrh and cinnamon grow, and in the coaſt that is about Saba, the Balſam alſo." Among the myrrh trees behind Azab, all along the coaſt to the ſtraits of Babelmandeb is its native country. It grows to a tree above fourteen feet high, ſpontaneouſly and without culture, like the myrrh, the coffee and frankincenſe tree; they are all equally the wood of the country, and are occaſionally cut down and uſed for fuel. We need not doubt but that it was early tranſplanted into Arabia, that is, into the ſouth part of Arabia Felix, immediately fronting Azab: the high country of Arabia was too cold for it, being all mountainous, and water freezing there. The firſt plantation that ſucceeded ſeems to have been at Petra, the ancient metropolis of Arabia, now called Beder or Beder Hunein.

Afterwards being tranſplanted into Paleſtine, it obtained the name of *Balſamum Judaicum*, and Balm of Gilead, and became an article of commerce there.

Proſper Alpinus ſays, that Meſſoner a eunuch, governor of Cairo in 1519, cauſed to be brought from Arabia forty plants, which he placed in the garden of Mattareah. Bellonius relates, that in his time there were ten plants at Mattareah. There were none exiſting when Mr. Bruce viſited Cairo, but ſome of the Chriſtians then living there, remembered one plant in that garden.

There were three productions from this tree very much eſteemed among the ancients. The firſt was called *Opobalſamum* or juice of the Balſam, which was the fineſt kind, compoſed of that greeniſh liquor found in the kernel of the fruit: the next was *Carpobalſamum*, made by the expreſſion of the fruit when in maturity: the third was *Xylobalſamum*, the worſt of all; it was an expreſſion or decoction of the ſmall new twigs of a reddiſh colour. But the principal quantity of balſam in all times was produced by inciſion, as at this day. The wound is made by an ax, when the juice is in its ſtrongeſt circulation in july, auguſt, and the beginning of ſeptember. It is then received into a ſmall earthen bottle, and every day's produce is poured into a larger, which is kept cloſely corked. The Araba Harb, a noble family of Beni Koreiſh, are the proprietors of it, and of Beder, where it grows. It is a ſtation of the

Emir

Emir Hadje, or pilgrims going to Mecca, half way between that city and Medina.

Some books ſpeak of a white ſort, brought by the caravans from Mecca; and others of a balſam of Judea, but theſe are counterfeits and adulterations. The balſam of Judea was loſt long ago, but as late as Galen's time it was growing in many places of Paleſtine beſides Jericho.

When Sultan Selim conquered Egypt and Arabia in 1516, three pounds was then the tribute ordered to be ſent to Conſtantinople yearly, and this is ſtill kept up. The remainder is ſold or farmed out to ſome merchants; who, to increaſe the quantity, adulterate it with oil of olives and wax, and ſeveral other mixtures, conſulting only the agreement of colour; formerly, we are told, it was done with art, but nothing is eaſier detected than this fraud now.

It does not appear that the ancients had ever ſeen this plant, they deſcribe it ſo variouſly; and Proſper Alpinus corroborates the errors of the ancients, by ſaying it is a kind of vine (viticoſus). The figure he has given is a very bad one.

The juice, when firſt received into the bottle from the wound, is of a light yellow colour, apparently turbid, in which there is a whitiſh caſt, which I apprehend ariſes from the globules of air that pervade the whole in its firſt ſtate of fermentation; it then appears very light upon ſhaking. As it ſettles and cools, it turns clear, and loſes that milkineſs. It then has the colour of honey, and appears more fixed and heavy than at firſt. After being kept ſome years, it becomes of a much deeper yellow, and of the colour of gold, but continues perfectly fluid, and loſes very little of taſte, ſmell, or weight. The ſmell at firſt is violent and ſtrongly pungent, like that of volatile ſalts. In its pure and freſh ſtate it diſſolves eaſily in water. If dropt on a woollen cloth, it will waſh out eaſily, and leaves no ſtain. It is of an acrid, rough, pungent taſte, is uſed by the Arabs in all complaints of the ſtomach and bowels, is reckoned a powerful antiſeptic, and of uſe in preventing any infection of the plague. Theſe qualities it enjoys probably in common with balſam of Tolu, Peru, &c. which we have received from America. It is always uſed and particularly eſteemed by the ladies, as a coſmetic; as ſuch it has kept up its reputation in the caſt to this day. The manner of applying it is this: you firſt go into the tepid bath till the pores are ſufficiently opened, you then anoint yourſelf with a ſmall quantity, and as much as the veſſels will abſorb; never-fading youth and beauty are ſaid to be the conſequences[a].

6. Leaves pinnate; petioles long, five-leaved. Leaflets ovate-oblong, evergreen, quite entire, oppoſite with a terminating one, all pedicelled. Racemes ſeveral, axillary, filiform, with ſcattered flowers[b]. This is therefore very diſtinct from the foregoing ſpecies, which has the leaflets ſeſſile, and ſmall in compariſon with theſe; the flowers in panicles, not in long racemes, hanging down, as in this ſpecies[c].

Cateſby deſcribes his *Poiſon-wood* as a ſmall tree, with a light-coloured ſmooth bark. The mid-rib of the leaf as ſeven or eight inches long, and the pedicels as an inch in length. The fruit as hanging in bunches, ſhaped like a pear, of a purple colour, covering an oblong hard ſtone. From the trunk a liquor diſtils as black as ink, which the inhabitants ſay is poiſon. Birds feed on the fruit. Native of America.

7. Leaves oppoſite pinnate; folioles five, or ſeven, ſmooth, petiolate, like thoſe of the Laurel. Panicle manifold, calyx ſub-quadridentate, obtuſe, permanent: petals four, ſeſſile, ovate, acuminate. Nectary from a marginated receptacle, ſurrounding the germ, within the ſtamens. Anthers oblong, ſeeming four, connate: filaments eight, awl-ſhaped, ſhorter than the petals: germ ovate: ſtyle cylindric, the length of the ſtamens: ſtigma ſimple. Native of the Eaſt-Indies. Perennial[d].

8. A tree with a trunk thirty feet high, branching at the top; branchlets leafy and flowery. Leaves alternate, unequally-pinnate, with two, or three oppoſite, ovate leaflets on each ſide, ending in long points, ſmooth, quite entire, on ſhort petioles which are gibbous at the baſe. Flowers yellowiſh-white, axillary, corymbed. Perianth very ſmall, four-toothed. Petals lanceolate, ſpreading at the tip. Filaments filiform, half the length of the calyx, inſerted into the tube. Germ ſuperior, ſubgloboſe; ſtyle cylindrical. Stigma capitated, depreſſed, four-cornered. Fruit ovate, oblique, four-celled, reſembling that of the Laurel. The nucleus involved in a brittle covering; four-celled, or four ſtones wrapped up in a viſcid red pulp, which has a balſamic ſmell and taſte, hardens into a grey reſin, and is uſed to burn as a perfume. The whole tree is extremely ſweet-ſcented, and pours out a very odorous balſam from the wounded trunk or branches, which is uſed in the dyſentery; the doſe is one drachm in red wine: this is alſo uſed in houſes and churches to burn as a perfume. It grows in the woods of Guiana and by the ſea-ſhore, flowering and fruiting in ſeptember. The Caribbee name is *Arouan*, the French, *Arbre de l'Encens*[e].

9. It grows to a conſiderable ſize, and is one of the moſt valuable timber trees in the iſland of Jamaica, but not common. The wood is white, and of a curled grain when young, but grows of a dirty clouded aſh-colour with age: it bears a fine poliſh, and has a pleaſant ſmell. It is heavy, and in great repute among cabinet-makers. All the parts of this tree are full of warm, aromatic particles, and may be uſed in baths and fomentations. The berries are oblong, and have much of the taſte of the balſam *Copaiba*[f]. An infuſion of the leaves has a very pleaſant flavour, is highly cephalic, ſtrengthens the nerves, and is particularly reſtorative to weak eyes. There are ſeveral ſpecies of *Amyris* in Jamaica, the leaves and bark of which are impregnated with a fine balſamic juice; and if the body was rapped at the proper ſeaſon, might be found to tranſude a thick liquor reſembling that of the Gilead balſam, to which the taſte of this bark, and wood of the ſmaller branches, bears a very exact relation[g].

*Amyris*. See *Armenia*.

ANABASIS. (*Anabaſis, from* ἀναβαίνω, *to aſcend or climb.*)

*Lin. gen.* n. 312. *Reich.* 349. *Schreb.* 458. *Gaertn.* 77. *Juſſ.* 84.

Claſs. 5. 2. Pentandria Digynia.

Nat. order of *Holoraceæ. Atriplices* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* three-leaved: *leaflets* roundiſh, concave, obtuſe, ſpreading.

COR. five-petalled: petals ovate, equal, *leſs than* the calyx, permanent.

STAM. *Filaments* filiform, longer than the corolla: *anthers* roundiſh.

PIST. *Germ* roundiſh, acuminate, ending in two *ſtyles*: *ſtigmas* obtuſe.

PER. a *berry*: roundiſh, ſurrounded by the calyx, dilated.

SEED ſingle, ſcrew-ſhaped.

ESSENTIAL CHARACTER.

*Cal.* three-leaved. *Cor.* five-petalled. *Berry* one-ſeeded, ſurrounded by the calyx.

SPECIES.

1. Anabaſis aphylla. *Leaſleſs Anabaſis.*
*Lin. ſpec.* 325. *Juſſ.* 264. *Reich.* 628. *amœn. acad.* 2. 347. *Gaertn. fruct.* 1. 375.
Salſola baccifera. *Gmel. ſib.* 3. t. 18.
Kali baccíferum. *Bauh. cent.* 1. 1. 18.
*Weſt-ind leaves; the joints emarginate.*

2. Anabaſis foliola. *Leafy Anabaſis.*
*Lin. ſpec.* 325. *Juſſ.* 264. *Reich.* 628.

[a] Travels to Abyſſ. vol. 5. p. 16, &c.
[b] Lin. amœn. acad. 7. p. 69.
[c] Lin. mant.
[d] Browne.
[e] Aublet guian. and Lin. ſuppl.
[f] Long. jam. 731.

S. foliis incraſſatis, &c. *Gmel. ſib.* 3. *p.* 99. *Pallas it.* 2. *p.* 286.

K. bacc. fol. clavatis. *Buxb. cent.* 1. 12. *t.* 19. *f.* 1. *Leaves ſub-clavate.*

3. Anabaſis tamariſcifolia. *Tamariſk-leaved Anabaſis. Lin. ſpec.* 324. *Reich.* 628.

*Leaves awl-ſhaped; pericarps juiceleſs.*

4. Anabaſis ſpinoſiſſima. *Thorny Anabaſis. Lin. ſyſt.* 264. *ſuppl. p.* 173.

*Shrubby: branches without leaves, but full of ſpines.*

DESCRIPTIONS.

1. Stems ſhort, roundiſh, brachiate: branches oppoſite, ſubdivided, jointed: flowers oppoſite, ſeſſile [a]. Corolla very ſmall. Berry alſo very ſmall, covered by the calyx, which is coriaceous, and becomes very large in a ſtate of maturity; it is red, the pulp is watery, and dyes a yellow colour. The ſeed is ovate, compreſſed, lens-ſhaped, green, and fixed to the baſe of the pericarp, without any receptacle [b]. It is a perennial plant, and has been found wild on the ſhores of the Caſpian.

2. Seldom more than half a foot in height; more or leſs branched. Leaves ſometimes alternate, ſometimes three together, the two lateral ones ſmaller than the other. Theſe are ſurrounded with from ſix or ſeven to ten little flowers [c]. Annual. Found wild on the ſhores of the Caſpian.

3. A ſhrub with white branches, very ſmooth. Leaves three-cornered, reſembling thoſe of the Tamariſk. Flowers ſubſpiked, ſolitary, axillary. Calyx large. Germ conical, ending in an awl-ſhaped ſtyle, with three ſtigmas [d]. Native of Spain.

4. A Shrub. Stem ſmooth, very branching: branches naked at the ends: with ſcales from three to five, very ſmall and imbricate. Flowers about the ſpine, many, ſeſſile, cloſe, adhering tenaciouſly. Calyx with three, ſharp, flatted, unequal, permanent, keeled ſcales. Petals five or ſix, lanceolate, hyaline, ſcarcely longer than the calyx, erect. Hardly any filaments. Anthers adhering to the diſk of the petals. Germ globoſe. Style filiform. Stigma ſubemarginate. Seed ſurrounded by a pellucid bladder [e]. Its native place of growth is unknown.]

ANACAMPSEROS. See *Claytonia, Portulaca, Sedum.*

ANACARDIUM. (*ἀνα fine, and καρδία cor*; without heart: becauſe the pulp of the fruit, inſtead of having the ſeed incloſed, as is uſually the caſe, has the nut growing out at the end of it.)

*Lin. gen. n.* 520. *Reich.* 546. *Schreb.* 1582. *Rottboell. coll.* 2. 252. *Juſſ.* 368.

Acajou *Tournef.* 435. Acajuba *Gærtn.* 40.

Claſſ. 23. 1. Polygamia Monoecia.

Nat. order of *Holoraceæ. Terebintaceæ* Juſſ.

GENERIC CHARACTER.

* *Hermaphrodite flower.*

CAL. *Perianth* five-leaved; *leaflets* ovate, concave, coloured, erect, deciduous.

COR. *Petals* five, lanceolate, acute, three times as long as the calyx, upright at bottom, reflex at the end.

STAM. *Filaments* ten, united at the baſe, upright; nine of them capillary, ſhorter than the calyx; one thicker, double the length of the others, lying on the germ in front. *Anthers* roundiſh; in the longer filament large and fertile; in the reſt ſmall.

PIST. *Germ* kidney-ſhaped, obliquely emarginate in front. *Style* ſubulate, bent in, the length of the corolla. *Stigma* ſmall, roundiſh, depreſſed, concave.

PER. none. *Receptacle* fleſhy, very large, obovate.

SEED. *Nut* kidney-ſhaped, large, at the top of the receptacle; with a thick ſhell, cellular within and abounding in oil.

* *Male flowers, either mixed with the Hermaphrodites, or on a diſtinct tree.*

CAL. COR. STAM. as in the hermaphrodites.

PIST. *Germ* none or abortive.

OBS. *This tree was originally placed in the tenth claſs; it was removed by Linnæus to the ninth; and is now placed in the twenty-third from the obſervations of Rottboell.*

ESSENTIAL CHARACTER.

*Cal.* five-leaved. *Pet.* five, reflex. *Anth.* ten, one only fertile. *Nut* kidney-ſhaped, on the top of a fleſhy receptacle.

SPECIES.

1. Anacardium occidentale. *Caſhew-nut, Caſſu,* or *Acajou.*

*Lin. ſpec.* 548. *ſyſt.* 384. *Reich.* 2. 229. *hort. cliff.* 161. *upſ.* 102. *fl. zeyl. n.* 165. *Jacqu. amer. t.* 181. *f.* 35. *pict. t.* 121. *Plenck. ic. t.* 319. *Blackw. t.* 369. *Brown. jam.* 226. *Cateſb. car.* 3. *t.* 9. *Lour. coch.* 248.

Acajuba occidentalis. *Gærtn. fruct.* 1. 192.

Acajou. *Piſ. braſ.* 58. *mant.* 193.

Acajaiba. *Marcgr. braſ.* 95.

Caſſuvium. *Rumph. amb.* 1. *t.* 69.

Caſchou. *Merian ſurin. t.* 16.

Kapa-mava. *Rheed. mal.* 3. *t.* 54.

DESCRIPTION, *&c.*

[The *Caſhew* is an elegant tree, twenty feet high. According to Browne, not more than twelve or ſixteen feet in height, ſpreading much as it riſes, and beginning to branch at the diſtance of five feet from the ground. Long, on the contrary, aſſures, that in good ſoils it ſpreads to the ſize of a walnut-tree, which it much reſembles in the ſhape and ſmell of the leaves. The trunk ſeldom exceeds half a foot in diameter. Leaves coriaceous, ſubovate, ſhining, quite entire, petioled, ſcattered alternately. Panicles corymbed, diffuſed and terminating, containing numerous ſmall, ſweet-ſmelling flowers, ſitting on an oblong receptacle, hardly to be diſtinguiſhed from the peduncle. Corolla red: it has commonly ten ſtamens, one of which has no anther; but it has frequently eight, or only ſeven, all fertile; and ſometimes there are female flowers entirely deſtitute of ſtamens [f].

The fruit or apple has an agreeable ſub-acid flavour, with ſome degree of reſtringency [g]. Some of theſe are of a yellow, and others of a red colour, owing probably to ſome difference in the ſoil or culture [h]. The juice expreſſed from the fruit, and fermented, yields a pleaſant wine; and diſtilled, a ſpirit is drawn from it, far exceeding arrack or rum; making an admirable punch, and powerfully promoting urine. Some planters in the Weſt-Indies roaſt the ripe fruit, or ſlice one or two into a bowl of punch, to give it a pleaſant flavour. The reſtringency of the juice has recommended it as a very ſignal remedy in dropſical habits.

The nut ſprings from one end of the apple [i]. ] It is of the ſize and ſhape of a hare's kidney, but is much larger at the end next the fruit, than at the other. The outer ſhell is of an aſh colour, and very ſmooth, under this is another which covers the kernel, between theſe there is a thick inflammable oil, which is very cauſtic; this will raiſe bliſters on the ſkin, and has often been very troubleſome to thoſe who have incautiouſly put the nuts into their mouths to break the ſhell. [This oil has been uſed with great ſucceſs in eating off ring-worms, cancerous ulcers and corns; but it ought to be applied with caution. The kernel when freſh, has a moſt delicious taſte, and abounds with a ſweet milky juice. It is an ingredient in puddings, *&c.* When older it is generally roaſted; and in this ſtate is not ſo proper for coſtive habits. Ground with Cacao it makes an excellent chocolate. When kept too long, it becomes ſhriveled, and loſes its flavour and beſt qualities. The thick oil of the ſhell tinges linen of a ruſty iron colour, which can hardly be got out; and if any wood be ſmeared with the oil, it prevents the wood from decaying. It would therefore be an excellent preſervative to houſe-timbers, and ſhip's bottoms [k].]

From the body of the tree is procured by tapping, or inciſion, a milky juice, which will ſtain linen of a deep black, that cannot be waſhed out again.

[a] Amm. acad. [b] Gærtner. [c] Gmelin. [d] Linnæus. [e] Lin. ſuppl.

[f] Jacqu. amer. [g] Loog. [h] Browne. [i] Long. [k] Ibid.

[This tree alſo annually tranſudes from five to ten or twelve pounds weight, of a fine ſemitranſparent gum, ſimilar to gum arabic, and not inferior to it in virtue or quality, except that it has a ſlight aſtringency, which perhaps renders it, in ſome reſpects, more valuable [a].

It is native of both Indies, and was cultivated in 1699, by the Dutcheſs of Beaufort [b].

PROPAGATION AND CULTURE.

The Caſhew-tree is eaſily raiſed in its native country from the nut. It is there of very quick growth, bearing fruit in two years after it is planted.] But in England the plants are with great difficulty preſerved; though by their firſt ſhoot from the ſeeds, they appear ſo ſtrong and vigorous, as to promiſe a much greater progreſs than they are ever ſeen to make.

They are eaſily raiſed from the nuts, which are annually brought from America in great plenty; each of theſe ſhould be planted in a ſmall pot filled with light ſandy earth, and plunged into a good hot-bed of tanner's bark, being careful to prevent their having wet, till the plants come up, for the nuts frequently rot with moiſture. The reaſon of my adviſing the nuts to be each put into a ſeparate pot, is, becauſe the plants ſeldom live when they are tranſplanted. If the nuts are freſh, the plants will come up in about a month after planting, and in two months more they will be four or five inches high, with large leaves; from this quick growth, many perſons have been deceived by ſuppoſing them hardy, and that they would continue the like progreſs, whereas they ſeldom advance much farther the ſame year.

The plants muſt be conſtantly kept in the ſtove, for they are too tender to live abroad in England, in the warmeſt ſeaſon of the year, nor will they thrive in a common green-houſe in ſummer. As theſe plants abound with a milky acrid juice, they ſhould have but little water, even in ſummer; and in winter, if they are ſparingly watered once in a fortnight, it will be ſufficient, for their roots are tender and ſoon periſh with moiſture.

When theſe plants are tranſplanted, it will be the beſt method to break the pots, for the roots do not put out many fibres to hold the earth about them, ſo that in ſhaking them out of the pots, moſt of the earth will fall away from their roots, and when this happens the plants ſeldom ſurvive it, therefore in breaking the pots, the ſame caution muſt be had not to diſturb the earth more than can be avoided; then the plant, with the ball of earth to its roots, ſhould be put into a pot one ſize larger than that in which it had before grown, filling up the pot with light ſandy earth, and plunge the pots again into the hot-bed. Theſe plants ſhould not be removed oftener than once a year, nor ſhould they be put into large pots; for unleſs their roots are confined, they will not thrive. With this management I have kept theſe plants ſeveral years, but they are of ſlow growth after the firſt ſeaſon, ſo that I have not raiſed any of them more than two feet and half high, and it is very rare to ſee them in England more than half that height, though I have ſeen two of them in flower; one in the late Sir Charles Wager's garden at Parſon's-green, and the other in Chelſea garden.

ANACARDIUM. See *Avicennia*.

——— officinarum. See *Semecarpus*.

ANACYCLUS. (*From* Ἀνακυκλέω, *to encircle.*)
*Linn. gen. n.* 969. *Reich.* 1051. *Schreb.* 1311. *Juſſ.* 185. *Gærtn. t.* 165.
Santolinoides. *Vaillant. mem. acad.* 1719. *Mich. gen.* 31.
Cotula. *Tournef.* 282.
Claſſ. 19. 2. Syngeneſia Polygamia ſuperflua.
Nat. order of *Compoſitæ Diſcoideæ. Corymbiferæ* Juſſ.

GENERIC CHARACTER.

CAL. common, hemiſpherical, imbricate: with many ovate, flat, ſtarp *ſcales*.

COR. compound, radiate: with numerous hermaphrodite corollets in the diſk; from five to ten females in the ray, ſcarcely higher than the diſk. *Hermaphrodites* funnel-ſhaped, with a quinquefid, ſpreading border. *Females* with a flatted tube, and an ovate, entire border.

STAM. in the hermaphrodites: *filaments* five, capillary, very ſhort; *anther* cylindric.

PIST. *Germ* flatted, *ſtigma* bifid, in the hermaphrodites: with a membrane on each ſide; *ſtyle* filiform, the length of the corollet; and two ſlender reflex *ſtigmas* in the floſcules.

PER. none; calyx unchanged.

SEED in the *hermaphrodites*, ſolitary, oblong, compreſſed, naked, or without down—in the *females* with a very broad membranaceous wing on each ſide, and emarginate at top, but without down.

REC. chaffy. *Chaffs* obtuſe, with a point.

ESSENTIAL CHARACTER.

*Receipt.* chaffy. *Down* emarginate. *Seeds* in the ray membranaceous.

SPECIES.

1. Anacyclus creticus. *Trailing Anacyclus.*
*Lin. ſpec.* 1258. *Reich.* 3. 858.
Cotula cretica, &c. *Tourn. cor.* 37.
Santolinoides annua, &c. *Vaillant. act.* 372.
*Leaves decompound, linear; diviſions ſubdivided, flat.*

2. Anacyclus orientalis. *Eaſtern Anacyclus.*
*Lin. ſpec.* 1258. *ſyſt.* 775. *Reich.* 3. 858.
Chamæmelum orientale, &c. *Tournef. cor.* 37. *Boerh. lugdb.* 1. *t.* 110.
*Leaves compound, briſtly, acute, ſtraight.*

[3. Anacyclus aureus. *Golden-flowered Anacyclus.*
*Lin. ſuant.* 287. *ſyſt.* 775. *Reich.* 3. 858.
Chamæmelum luteum capite aphyllo. *Baub. pin.* 133.
C. aureum, &c. *Baub. hiſt.* 3. *p.* 119.
Anthemis Chryſanthemum. *Lob. ic.* 771.
*Leaves bipinnate, roundiſh, hoary, hollow-dotted.*]

4. Anacyclus valentinus. *Fine-leaved Anacyclus.*
*Lin. ſpec.* 1258. *ſyſt.* 775. *Reich.* 3. 859. *hort. cliff.* 417. *Allion. ped. n.* 604. *Gærtn. fruct.* 2. 397.
Chryſanthemum valentinum. *Cluſ. hiſt.* 1. 332.
Buphthalmum lanuginoſum, foliis millefolii. *Baub. pin.* 3. 125.
B. tenuifolio ſimile. *Baub. hiſt.* 3. 125.
Chamæmelum tenuifolium, flore bullato aureo. *Barr. ic.* 1095.
*Leaves decompound, linear; diviſions ſubdivided, roundiſh, acute: flowers floſculoſe.*

DESCRIPTIONS, *&c.*

1, 2. The two firſt ſorts grow naturally in the iſlands of the Archipelago, from whence Tournefort ſent their ſeeds to the royal garden at Paris. I have received the ſeeds of both theſe plants from Portugal, ſo that they may alſo grow naturally there, as do many of thoſe plants, which were diſcovered by Tournefort in the Levant. Theſe are low plants, whoſe branches trail on the ground. The firſt ſort has fine-cut leaves, like thoſe of Chamomile; the flowers are ſmall, white, and grow ſingle, with their heads declining; theſe are like thoſe of the common May-weed. The ſecond has leaves like thoſe of the Ox-eye; the flowers are white, and like thoſe of Chamomile.

[3. Stems many, ſeven inches high, nearly erect, ſubſtriated, obſoletely hoary with villoſe hairs. Leaves bipinnate, roundiſh, linear, ſubcaneſcent, with decumbent hairs; pinnules ſpreading, pointed, hollow-dotted; the loweſt embrace the ſtem: the upper leaf ſimply pinnate. Peduncles terminal, ſolitary, length of the ſtem, one-flowered, leafleſs, ſubpubeſcent. Calyx hemiſpherical, pubeſcent, imbricate with ſcales, ſcarioſe and darker at the tip. Diſk of the corolla ſemi-ovate; florets of the diſk quinquefid. Many female florets in the ray, ſmall, without a border. (In *Santolina anthemoides*, which reſembles this, there are no female florets.) Receptacle conical, with lanceolate, concave, yellow chaffs.

[a] Long's jam. 3. 725, &c. [b] Hort. kew.

chaffa[a]. Native of the south of Europe, and the Levant. Cultivated here in 1570. The synonyms of *Colutea aurea*, perhaps belong rather to this plant[b].]

4. Grows a foot and a half high, sending out many side branches; the leaves are finely divided like those of Chamomile, and are hairy: the flowers grow single at the extremity of the branches, and are of a bright yellow colour, with a silvery scaly calyx. These are as large as those of the Ox-eye. A native of Spain and Italy. Cultivated in 1656, by Tradescant. It flowers in june and july[c].]

PROPAGATION AND CULTURE.

All these plants are annual: the seeds should be sown early in the spring in a border of light earth, where they are designed to remain, and require no other care but to keep them clean from weeds, and to thin the plants where they are too close. As they have no great beauty, a few plants only may be left for the sake of variety. They flower in july and august; and their seeds ripen in september.

ANAGALLIDASTRUM. See *Centunculus*.

ANAGALLIS. (Ἀναγελλις, *Dioscor. from* ἀναγελαω, *to laugh: because by curing the Spleen, it disposes persons to be chearful.*)

*Eng. Pimpernel. Fr. Mouron.*

*Lin. gen. n.* 206. *Reich.* 220. *Schreb.* 270. *Juss.* 95. *Gærtn. t.* 50.

Class. 5. 1. Pentandria Monogynia.

Nat. order of *Rotaceæ*. *Lysimachiæ* Juss.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, sharp, permanent: *divisions* keeled.

COR. wheel-shaped, *border* five-parted; *divisions* ovate-orbiculate, with the claws connected.

STAM. *Filaments* erect, shorter than the corolla, shaggy below: *anthers* simple.

PIST. *Germ* globose: *style* filiform, slightly bending: *stigma* capitate.

PER. a globose, one-celled *capsule*, opening transversely.

SEEDS very many, angular.

REC. globose, very large. (fungose, alveolate, free. *G.*)

ESSENTIAL CHARACTER.

*Cor.* rotate. *Caps.* opening horizontally.

SPECIES.

1. Anagallis arvensis. *Common Pimpernel.*

*Lin. spec.* 211. *Reich.* 422. *Suec. n.* 178. *Gærtn. fruct.* 1. 230. *Thunb. jap.* 83. *Hudf. angl.* 87. *Relh. cantab.* 85. *With.* 210. *Curtis lond.* 1. 12. *Oeder. dan. t.* 88. *Berg. phyt.* 115. *Blackw. t.* 43. *Plenck. ic. t.* 82. *Mor. hist. s.* 5. *t.* 26. *row.* 2. *f.* 5. *Pollich. palat. n.* 203. *Scop. carn. n.* 217. *Hall. helv. n.* 625. *Ger.* 494. 1. *emac.* 617. 1. *Park. theat.* 558. 1.

β. flore cœruleo. *Blue-flowered Pimpernel.*

*Hall. helv. n.* 626. *Allion. ped. n.* 317. *Hudf. and With. 2. Blackw.* 274. *Ger. emac.* 617. 2.

A. fœmina. *Mill. dict. n.* 2.

*Leaves undivided; stem procumbent. Corolla finely notched.*

2. Anagallis monelli. *Upright Pimpernel.*

*Lin. spec.* 211. *Reich.* 423. *hort. cliff.* 52. *upsal.* 38. *Clus. app. alt.*

*Leaves undivided: stem erect.*

3. Anagallis latifolia. *Broad-leaved Pimpernel.*

*Lin. spec.* 212. *Reich.* 423. *Tournef. inst.* 143. *Barr. ic.* 584?

*Leaves heart-shaped, stem-clasping; stem compressed.*

4. Anagallis linifolia. *Flax-leaved Pimpernel.*

*Lin. spec.* 212. *Reich.* 424. *Tournef. inst.* 143.

*Leaves linear; stem erect.*

5. Anagallis tenella. *Bog Pimpernel, Purple Loosestrife,* or *Money-wort.*

*Lin. syst.* 196. *Reich.* 424. *With.* 211. *Relh.* 86. *Curtis lond.* 3. 15.

Lysimachia tenella. *Lin. spec.* 211. *Hudf. ang.* 87. *Mill. dict.*

Nummularia minor, *&c. Bauh. pin.* 310. *prodr.* 139. *Mor. hist.* 2. *s.* 5. *t.* 26. *f.* 2. *Ger. emac.* 630. 3. *Park. theat.* 554. 2.

*Leaves ovate, sharpish; stem creeping.*

[a] Linn. [b] ibid. [c] Hort. kew.

[6. Anagallis verticillata. *Verticilled Pimpernel.*

*Allion. pedem. n.* 318. *t.* 85. *f.* 4. *Griss. vir. lus.* 2. *Barr. ic.* 584?

*Stem-leaves verticilled: stem erect.*

7. Anagallis pumila. *Dwarf Pimpernel.*

*Swartz prodr.* 40.

*Stem erect, leaves roundish acute sessile.*

DESCRIPTIONS, *&c.*

1. Stem quadrangular. Leaves opposite, sessile, smooth, underneath dotted with brown. Peduncles opposite, axillary, one-flowered, bending downwards after flowering. Corollas scarlet, purple at bottom, the edges slightly notched and hairy. Hairs of the filaments jointed. Stigma placed without the circle of the stamens[a]. Capsule smooth, with five coloured lines. Seeds about thirty, three-cornered, ovate, somewhat acuminate at each end, scabrous with dots, ferruginous brown. Gærtner observes, that he could never see the hemispherical hollow seeds which Haller describes[b].

Dr. Withering observes, that the leaves, when magnified, appear frosted over with very minute shining glands.

It is an annual plant, and flowers from may to august, in ploughed grounds and gardens, particularly in sandy soils. The blossoms open about 8 a.m., and close in the afternoon: hence its name of *shepherd's* or *poor man's weather-glass*. But if rain fall, or there be much moisture in the air; the flowers either do not open, or close up again. Small birds are very fond of the seeds. Schreber says that sheep eat it readily; by the experiments in *Amœn. acad.* it appears, that kine and goats feed on it, but that sheep refuse it.

It was formerly celebrated for its medical qualities, and given in maniacal cases, and even in the hydrophobia, but is now fallen into disuse. It appears however, says Lewis, that it has some claim to the resolvent and detergent virtues, ascribed to it by some writers.

Plukenet mentions a variety with larger leaves, four together placed crosswise; and Ray (syn. 282.) says he has found it among corn in England. Bobart found it with a white flower in Cowley field.] There is another variety with a flesh-coloured flower; but none of these are constant. There is also another with a worn-out purple flower, which has several years continued the same in the Chelsea garden; but there is little difference in the leaves of this and the common sort.

β. Is supposed to be only a variety; but from thirty years cultivating it, I can affirm it never alters; and the plants before they show their flowers are so different, as to be easily distinguished. There is a variety of this with the flower of a deeper blue, the seeds of which I received from Nice; and this has retained its colour for several years, during which time I have sown it in the Chelsea garden.

[Ray, Linneus, and others take the Blue Pimpernel to be only a variety of the red. Haller, following Blair and Boehmer, and followed by Allioni, inclines to think it a distinct species; and says, that it is a taller plant, with smaller leaves, and larger flowers; that the capsule is more ovate; but especially that the divisions of the calyx are narrower, and the petals ferrate about the edge. In the wild plants which I have seen, the flowers were rather smaller than in the common sort; and the petals of this are firmly notched about the edge, as well as of that.—Haller mentions finding the blue sort with three and four leaves together.

Blue Pimpernel grows wild in Sweden, Germany, and Switzerland: with us between Stockwell and Camberwell, and near Mitcham in Surry; near Histon in Cambridgeshire; and Bredon-hill in Worcestershire.]

2. A very beautiful, small plant, producing great numbers of fine blue flowers in april and may. [Native of Verona. Cultivated 1648 in the Oxford garden[c].

[a] Curtis. [b] Fruct. 1. 231. [c] Hort. kew.

3. Stem

3. Stem from erect ſpreading, brachiate, branching, quadrangular: one pair of oppoſite angles thrice as broad as the other pair, which have an acute edge on each ſide. Leaves have the baſe turned downward, rather obtuſe at the end, nerved, ſmooth, with pale dots underneath. Peduncles axillary, ſolitary, one-flowered, naked, round. Corolla blue, with a purpliſh baſe. Filaments purple: anthers oblong, yellow.—Very nearly allied to the firſt ſpecies; but diſtinguiſhed by its large, broad leaves, and compreſſed ſtem [a].

This was ſent Mr. Miller from Spain (1759) by M. Hortega, intendant of the royal gardens at Madrid. It is a trailing annual plant.

[4. Stem four-cornered, erect, three or four inches high, ſtiffiſh; with alternate erect branches. Leaves oppoſite, ſeſſile, ſharpiſh, poliſhed, longer than the internodes. Peduncles filiform, twice as long as the leaves. Capſules nodding, ſhorter than the calyx.—Wild in Spain and Portugal [a].

5. Root perennial. Stems numerous from two to four inches long; round, ſmooth, creeping, branched; the joints purple. Leaves oppoſite, ſmall, nearly round, entire, ſmooth, on very ſhort petioles. Peduncles axillary, in pairs, or ſingle, to an inch in length, upright, but after flowering hanging down, one-flowered. Calyx dotted with red. Corolla large, pale red with deeper veins. Capſule the ſize of a coriander ſeed. The hairs of the filaments are jointed as in the common ſort. Not uncommon on bogs, flowering from june to auguſt [c].

6. Stem a foot high, quadrangular, branching. Leaves in fours or fives; on the branches only in pairs: ſeſſile, ovate-lanceolate, ſmooth, generally reflex, underneath finely dotted with brown. Branches ſuberect, three or four from a verticil. Flowers proceeding from the verticils with the branches, and alſo upon the branches, both axillary and terminal: they are erect, but the capſules hang down. Corolla bright blue, twice as large as the calyx.—It approaches to Barrelier's plant, which is given as a ſynonym of the third ſpecies; but this is branching, and has the leaves not ſo acute. In the fourth ſpecies, the leaves are long, narrow, and not verticilled [d].

7. Native of Jamaica. Annual [b].]

PROPAGATION AND CULTURE.

The four firſt ſorts, being annual, are propagated from ſeeds, which ſhould be ſown ſoon after they are ripe. The firſt, though a beautiful little plant, being a common weed, is never cultivated, except in botanic gardens. The ſecond, third, and fourth, require to be ſheltered from extreme cold. The fifth being a bog plant, cannot be cultivated in gardens, without a ſituation proper for it; though it will flouriſh well enough in pots of bog earth plunged in water. The ſixth, if it be a diſtinct ſpecies, has not yet been cultivated with us.

ANAGALLIS. See *Centunculus*, *Evolvulus*, *Lyſimachia*, *Pæderota*.

——— aquatica. See *Gratiola*, *Mentha*, *Peplis*, *Samolus*, *Veronica*.

——— coerulea. See *Gratiola*.

ANAGYRIS. (*Plin. Ἀναγυρὶς, Dioſcor. from the name of a town in Attica.*

*Lin. gen. n.* 509. *Reich.* 552. *Schreb.* 695. *Tournef.* 647. *Juſſ.* 352.

Claſſ. 10. 1. Decandria Monogynia.

Nat. order of *Papilionaceæ* or *Leguminoſæ*.

GENERIC CHARACTER.

CAL. *Perianth* bell-ſhaped; *mouth* five-toothed, the upper pair of teeth more deeply divided.

COR. papilionaceous. *Standard* obcordate, ſtraight, emarginate, broader than the other petals, twice as long as the calyx; *wings* ovate-oblong, flat, longer than the ſtandard; *keel* ſtraight, very long.

STAM. *Filaments* parallel, diſtinct, riſing: *anthers* ſimple.

PIST. *Germ* oblong: *ſtyle* ſimple, riſing: *ſtigma* villoſe.

PER. an oblong, large, roundiſh, obtuſe *Legume*, a little reflex.

SEEDS ſix or more, kidney-form.

OBS. *The eſſential character conſiſts in the very ſhort, ſtraight ſtandard, and in the great length of the keel.*

ESSENTIAL CHARACTER.

*Standard* and *wings* ſhorter than the *keel* in a papilionaceous corolla. *Fruit* a legume.

SPECIES.

1. Anagyris fœtida. *Stinking Bean trefoil.*
*Lin. ſpec.* 534. *Reich.* 2. 244. *Lour. cochinch.* 260. *Haſſelq. itin.* 466. *Cluſ. hiſt.* 1. *p.* 93. *Bauh. pin.* 391. *Raii hiſt.* 1722.
*Leaves ovate, flowers axillary.*

2. Anagyris cretica.
*Mill. dict. n.* 2. *Raii hiſt.* 1722. *n.* 5.
*Leaves oblong, racemes longer.*

[3. Anagyris inodora.
*Lour. cochinch.* 260.
*Leaves pinnate; calyxes inflated, coloured; legumes compreſſed, ſtraight; racemes terminating, oblong.*

DESCRIPTIONS, *&c.*

Theſe are hardy deciduous flowering ſhrubs.]

1. The firſt ſort grows wild in the ſouth of France, in Spain, Italy, and Sicily: alſo about Smyrna. It is a ſhrub which uſually riſes to the height of eight or ten feet, and produces its flowers in april and may, which are of a bright yellow colour, growing in ſpikes, ſomewhat like thoſe of the Laburnum: the ſeeds are never perfected in this country, which is the reaſon of its preſent ſcarcity in England. [Cultivated in 1570, by Mr. Hugh Morgan [a].]

2. Is a native of Candia, and ſome of the iſlands of the Archipelago, and is at preſent very rare in the Engliſh gardens. This ſort has longer leaves than the former, and flowers later in the ſummer, ſo that it never produces ſeeds. [It is probably only a variety.

3. This is an upright ſhrub, equal to a middle-ſized tree: branches hanging down, frequently ſcandent. Leaves unequally pinnate; leaflets oblong, acuminate, ſmooth, without ſmell. Flower white. Native of the woods of Cochinchina [b].

It is doubtful whether Loureiro's *Anagyris fœtida*, found wild near Canton in China, be the ſame with our European one.]

PROPAGATION AND CULTURE.

Theſe may be propagated by laying down their tender branches in the ſpring, obſerving to tongue them in the ſame manner as the layers of Carnations, being careful in dry weather to ſupply them with water; which if duly performed, the layers will have taken root by the following ſpring, when they ſhould be cut off from the old plants, a little time before they begin to put out their leaves, and planted in a warm ſituation; for if they are too much expoſed to cold winds, they will be in danger of being deſtroyed in a hard winter. This method of propagating theſe plants, is to ſupply their defect in not producing ripe ſeeds in this country: for the plants which are produced from ſeeds, will be much handſomer, and will riſe to a much greater height.

If you propagate theſe plants from ſeeds, you ſhould ſow them on a moderate hot-bed the beginning of march. [Or in a border of good rich earth, in a well-ſheltered place, ſifting over them about half an inch of fine mould, and covering them with a common frame, to protect them in caſe of ſevere weather.] If the ſeeds are good, the plants will appear in a month after the ſeeds are ſown; when they ſhould be inured by degrees to the open air, into which they ſhould be removed towards the end of may, placing them in a ſheltered ſituation; for this purpoſe the ſeeds may be ſown in pots, and plunged into a hot-bed, becauſe the plants do not bear tranſplanting well till the ſpring following: and as they are impatient of cold while young, the two firſt winters it will be proper to ſhelter them under a common frame, where the glaſſes may be drawn

[a] Linneus. [b] Ibid. [c] Curtis. [a] Allioni. [b] Swartz. [a] Hort. kew. [b] Loureiro.

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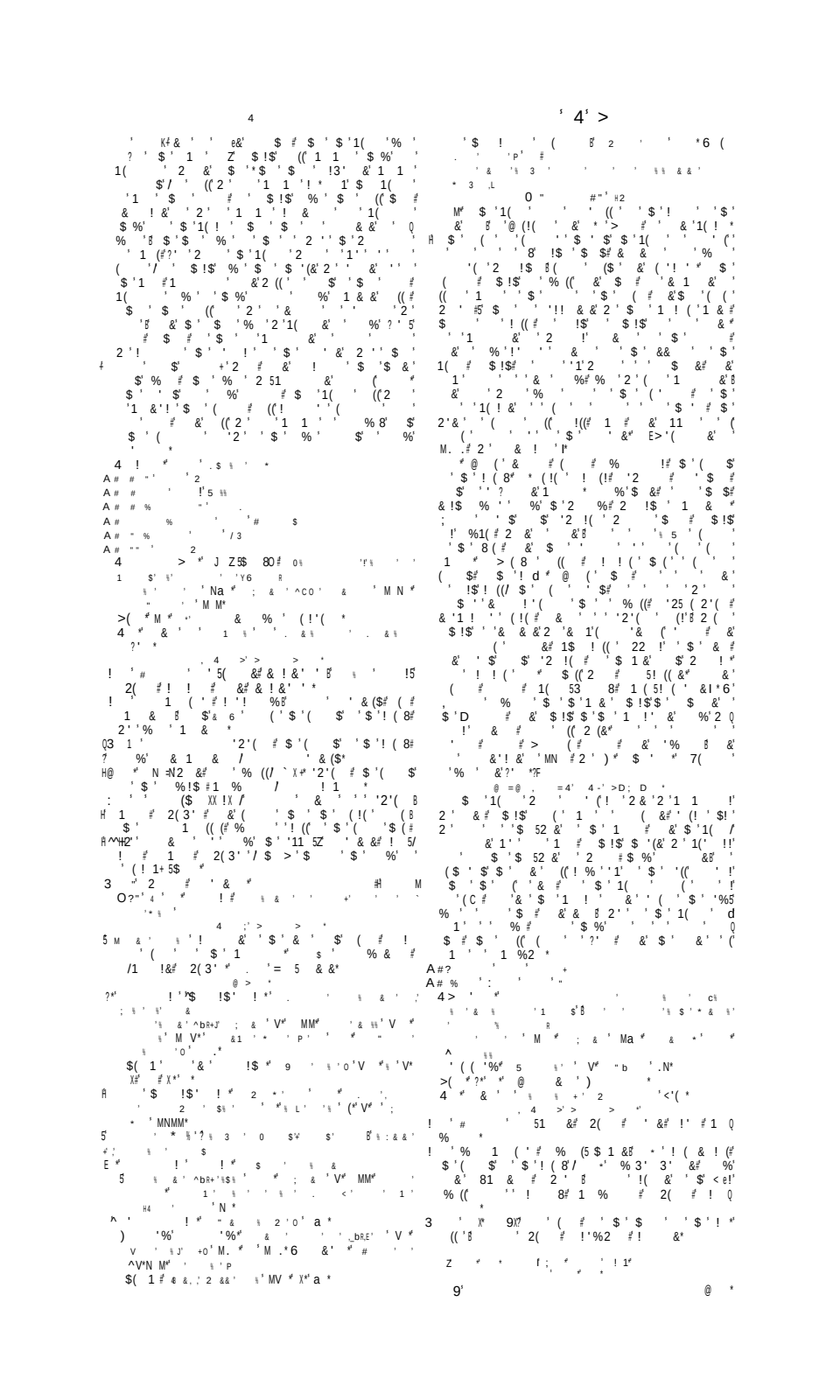

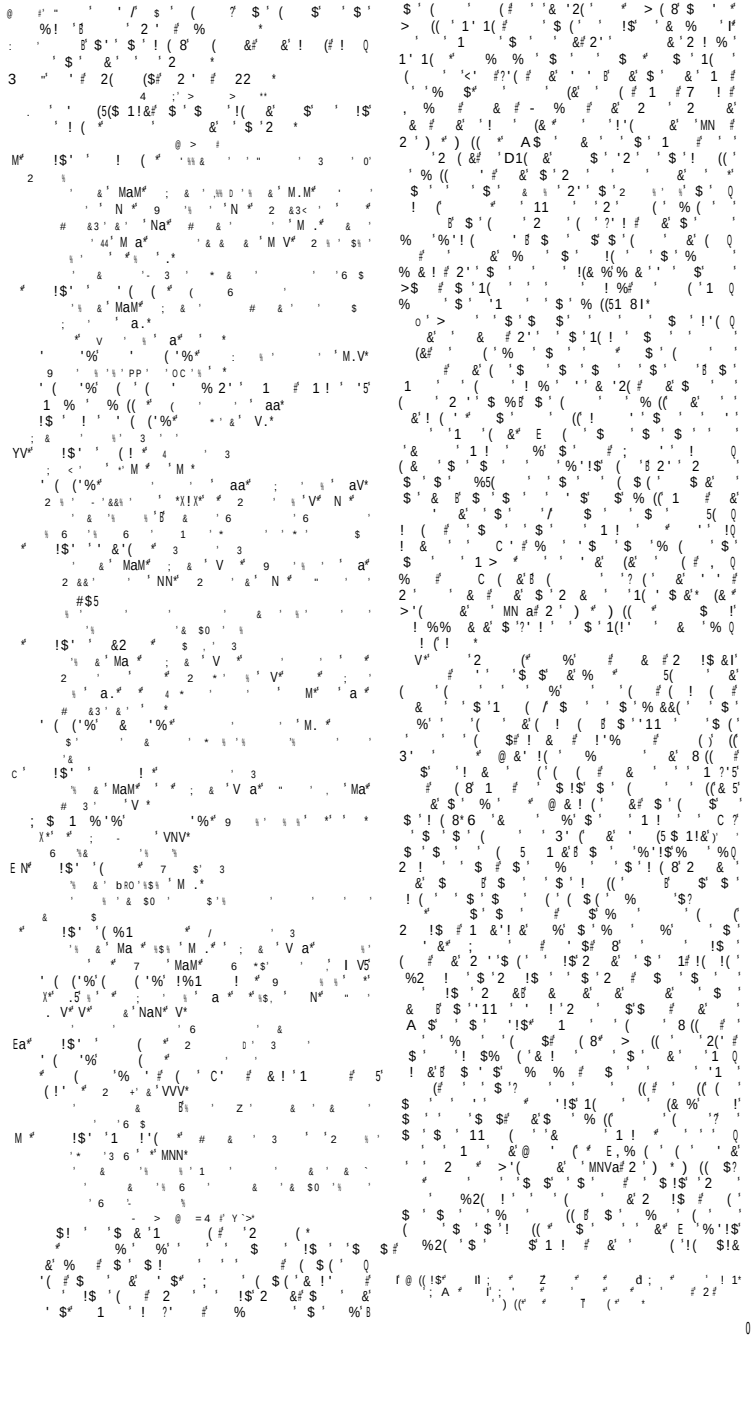

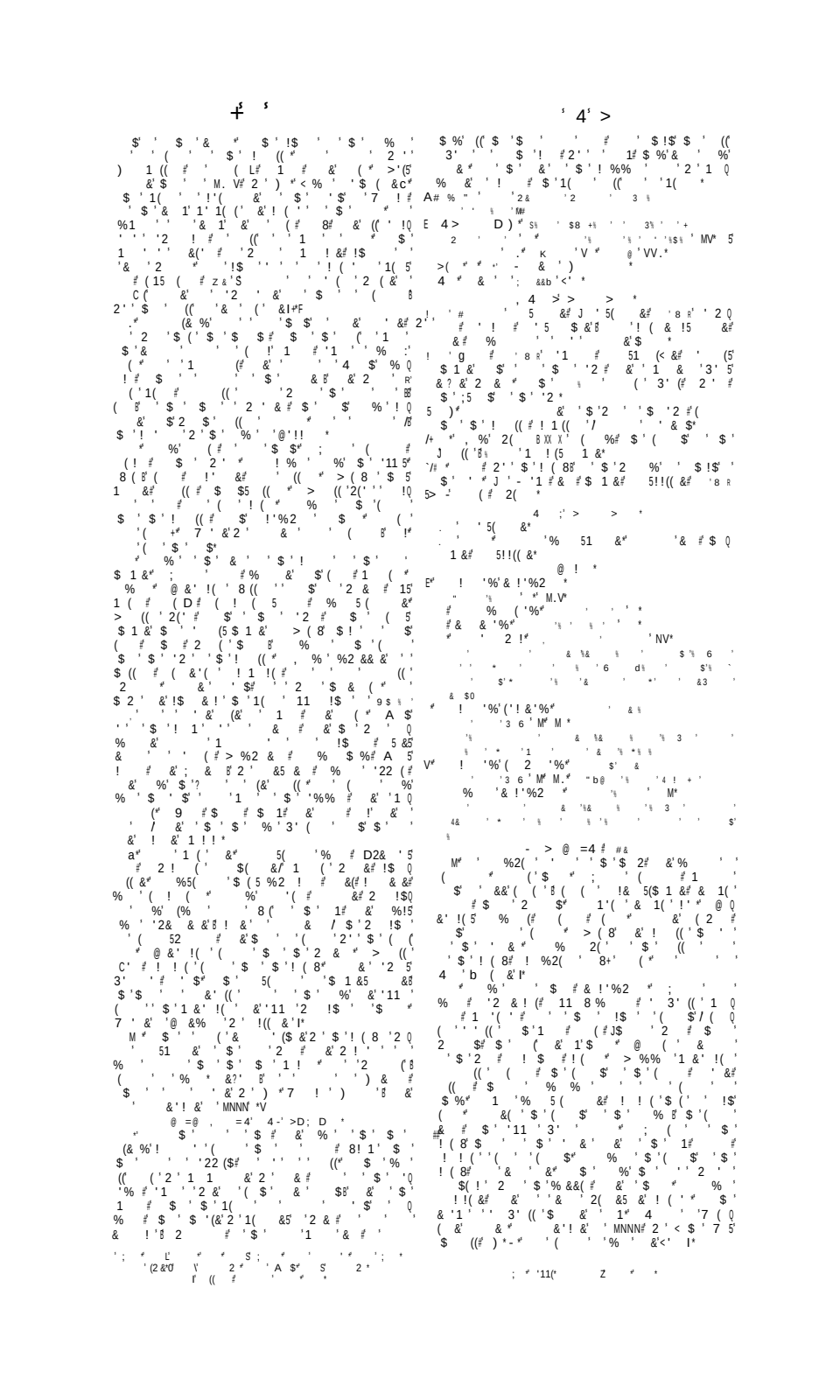

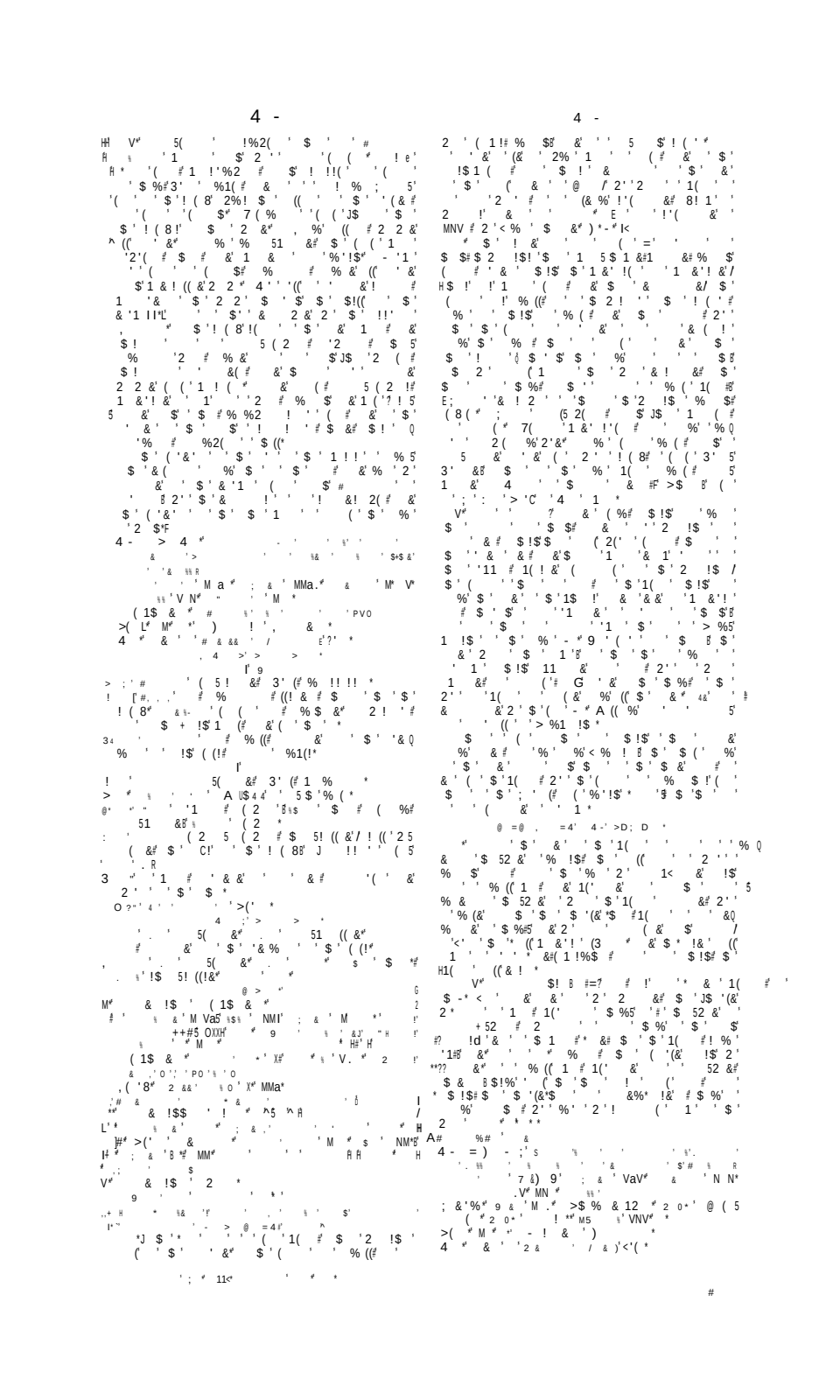

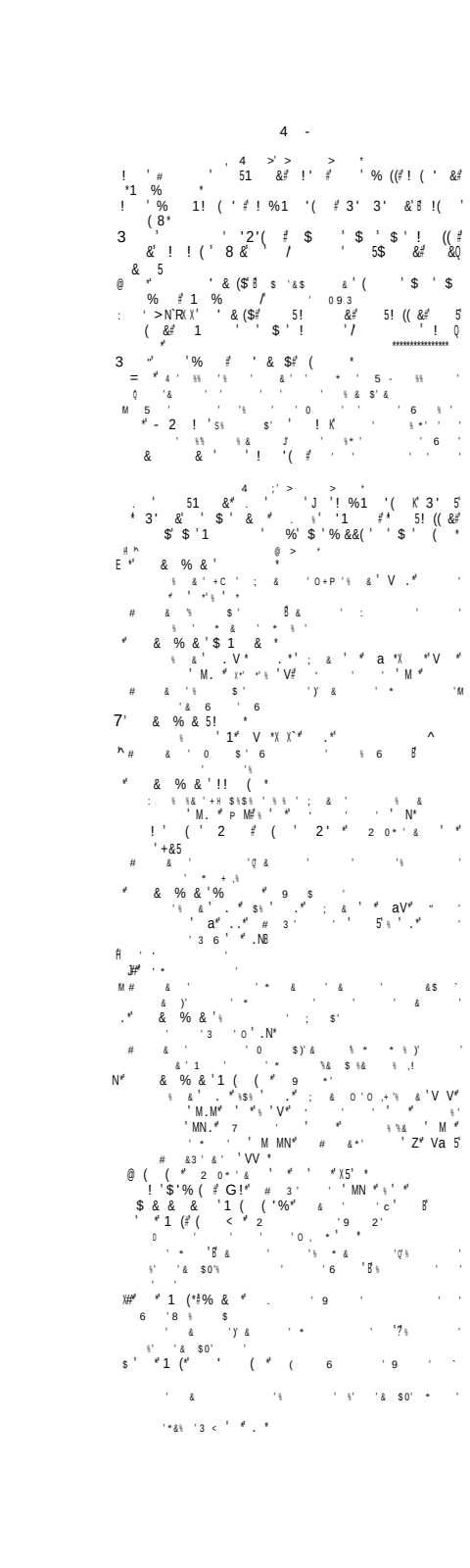



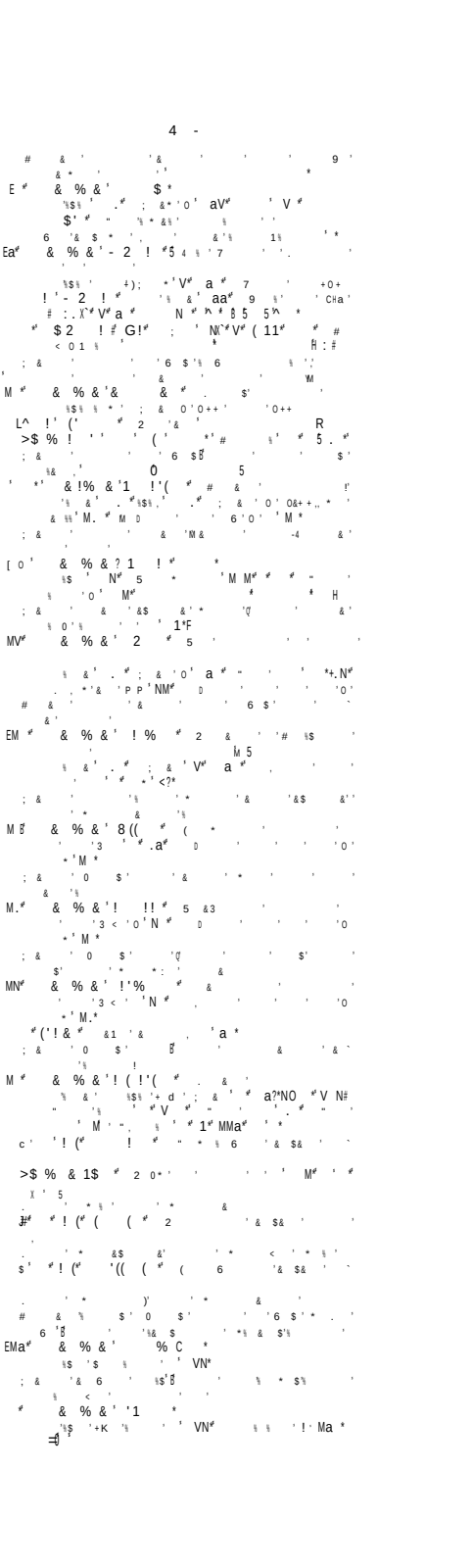

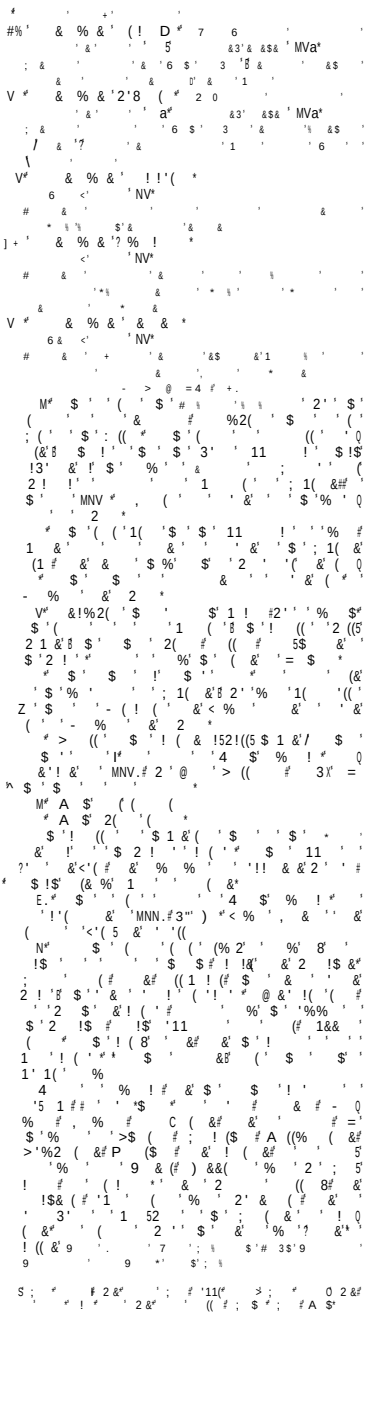



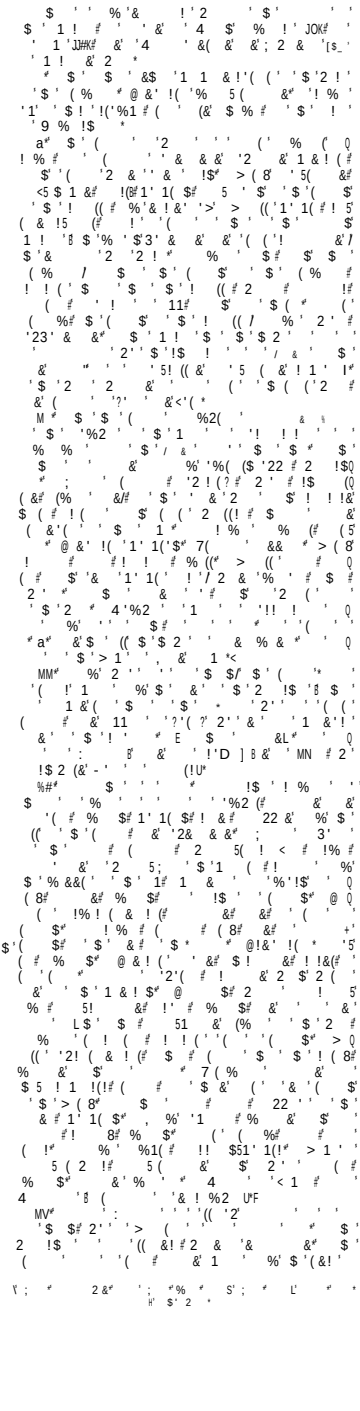

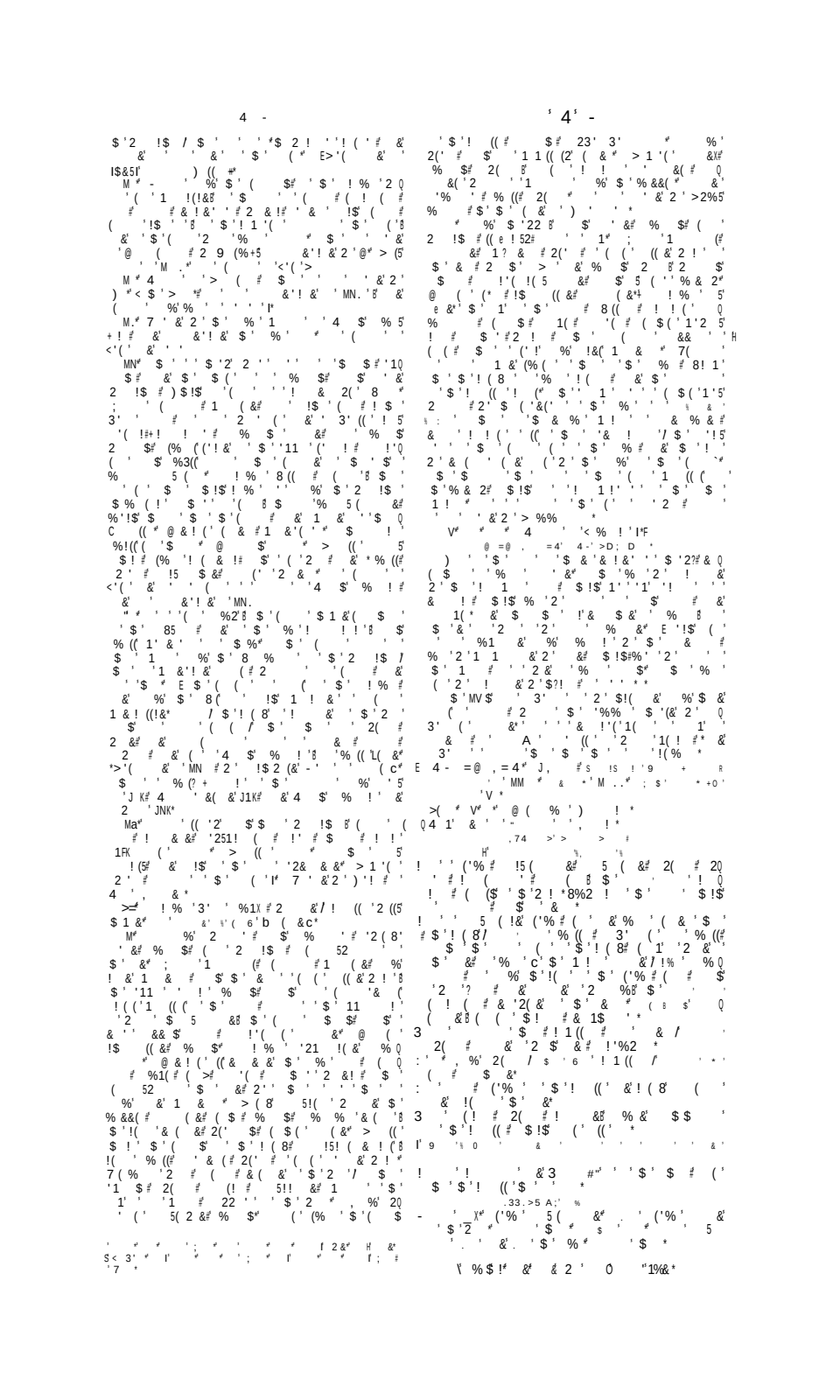

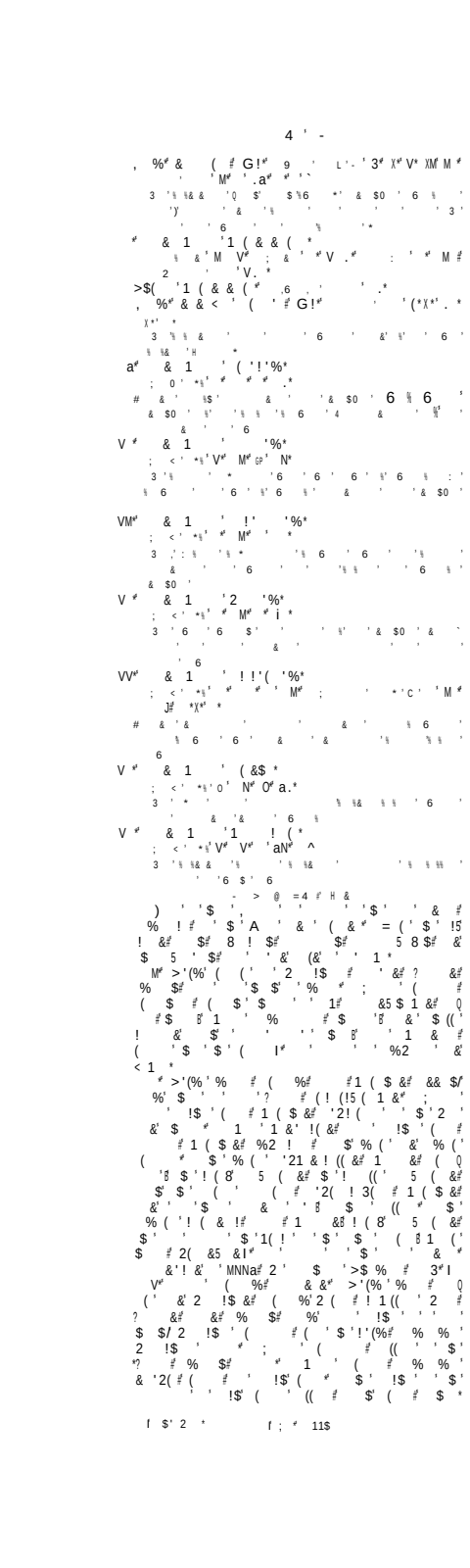

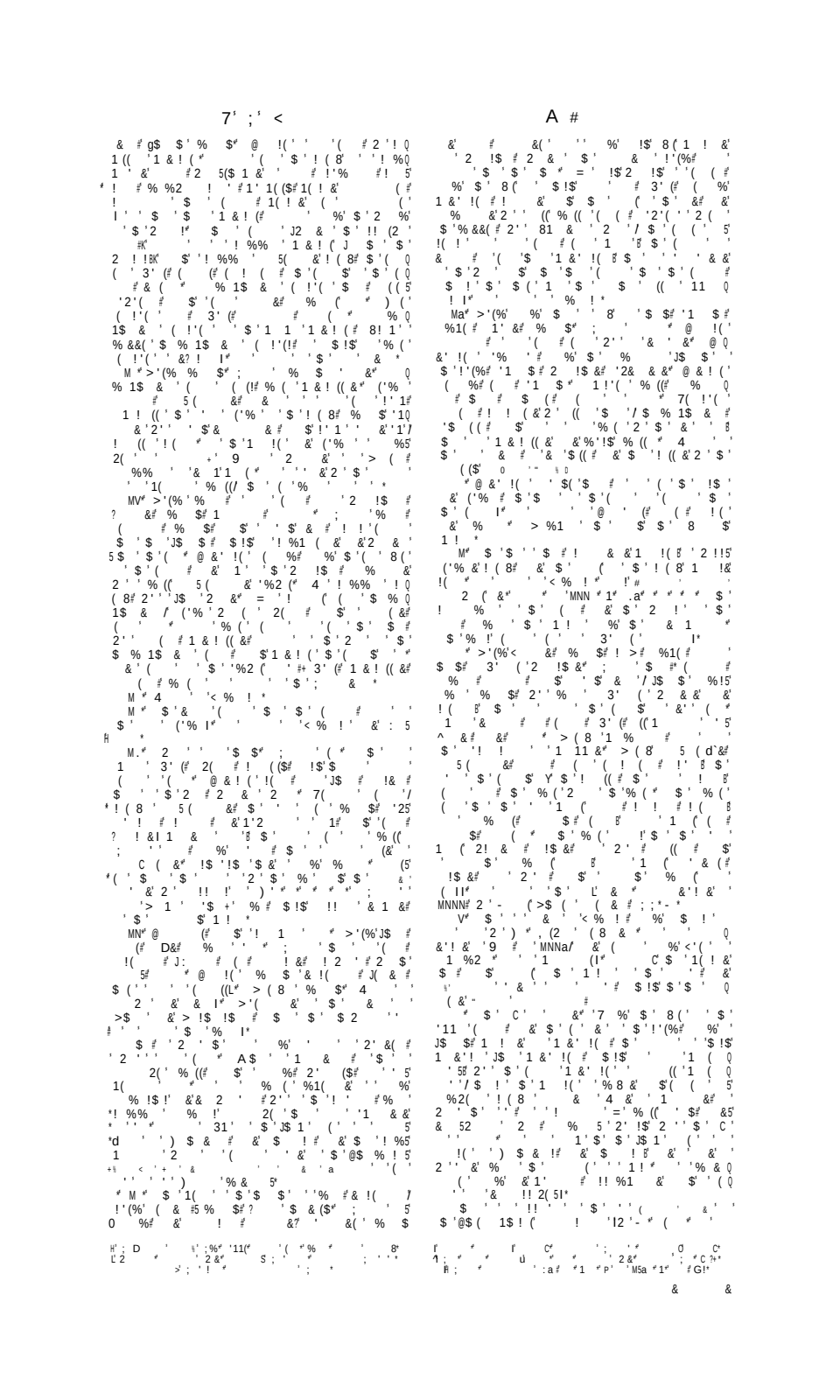

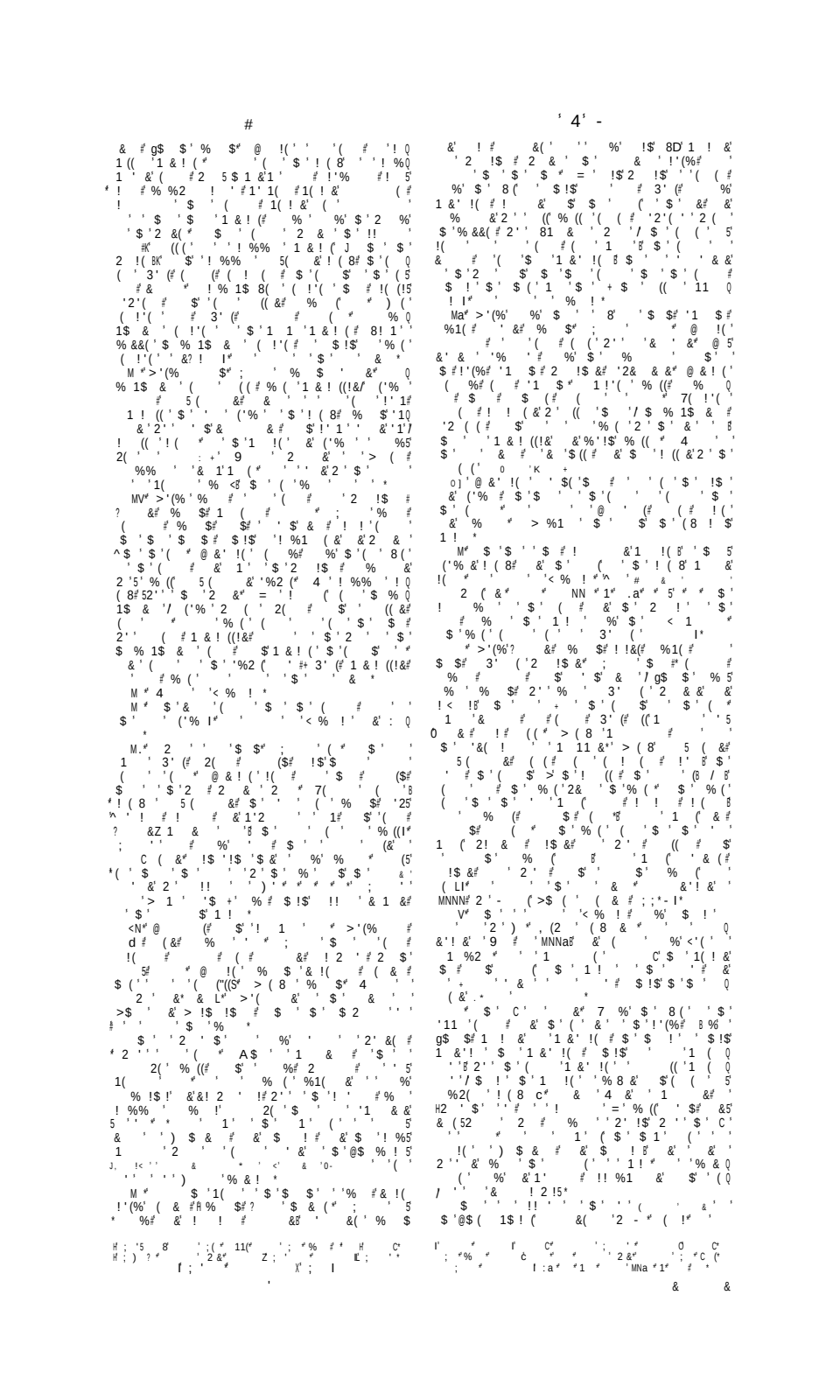

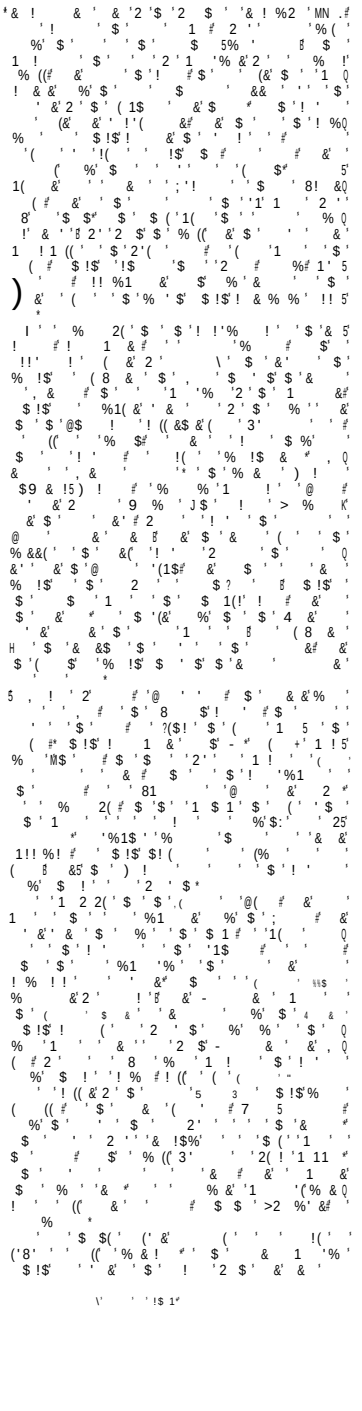

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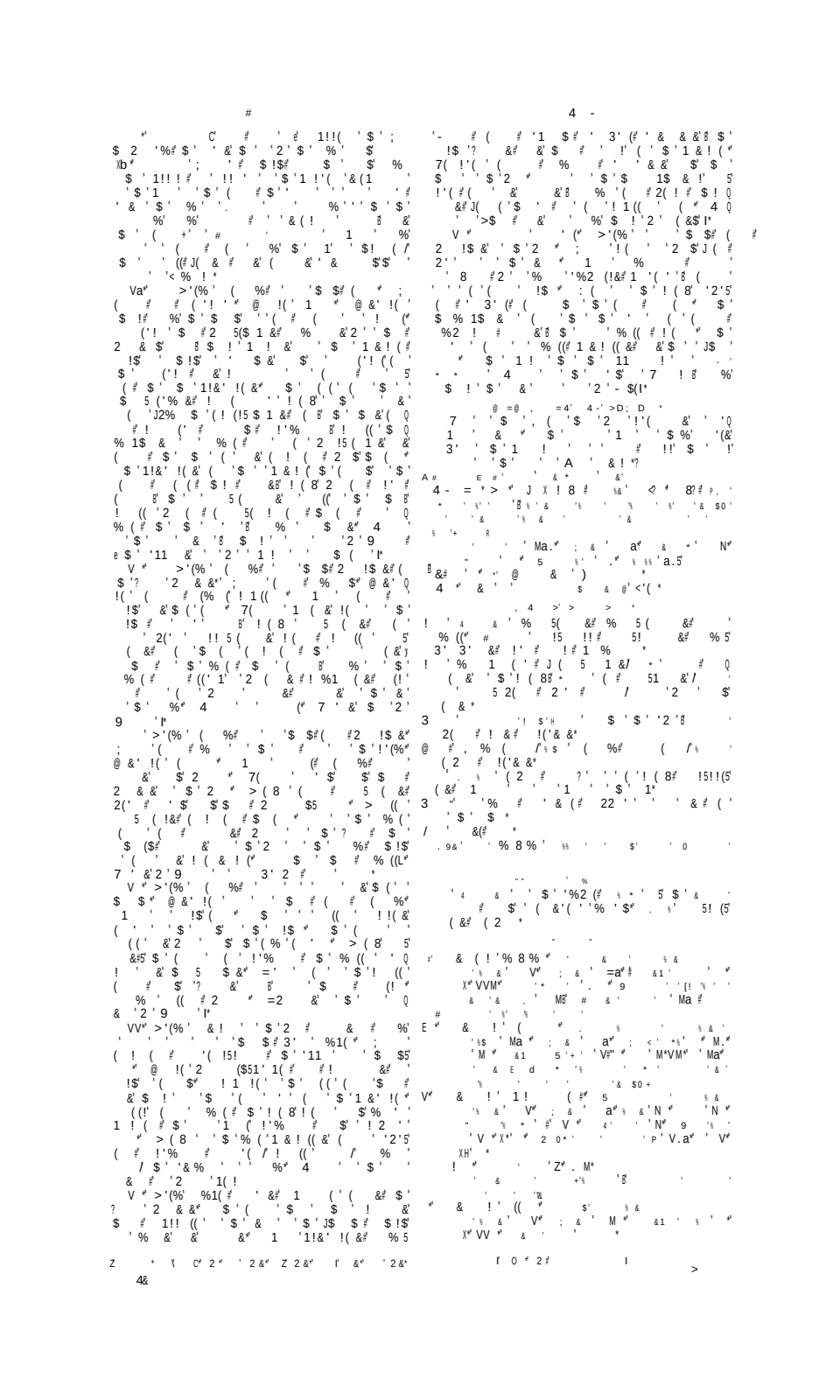

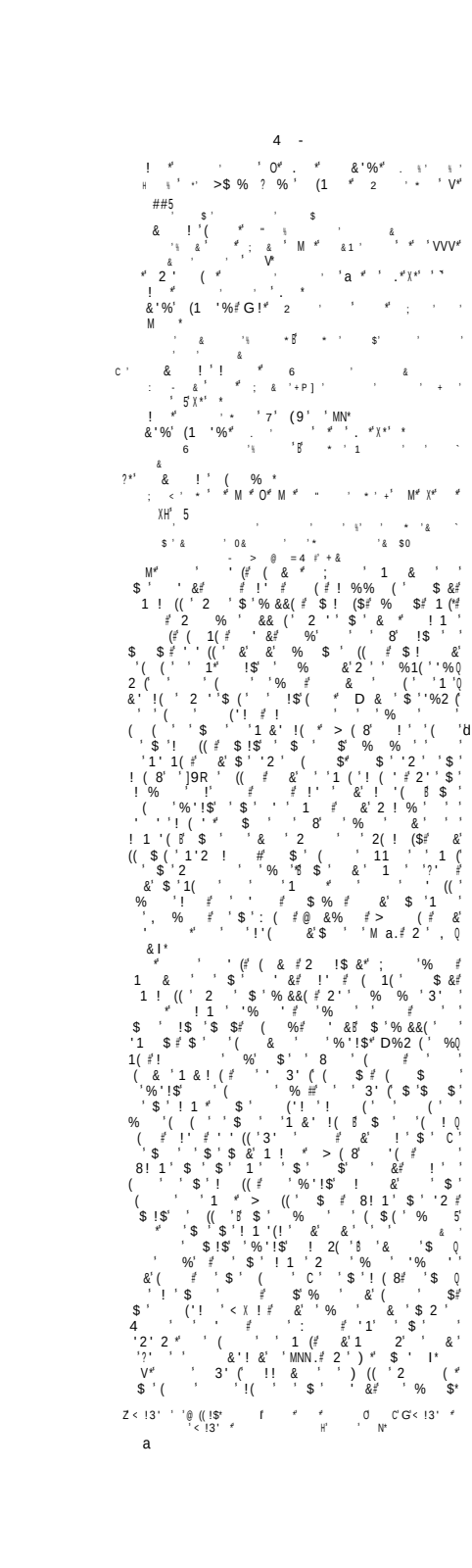



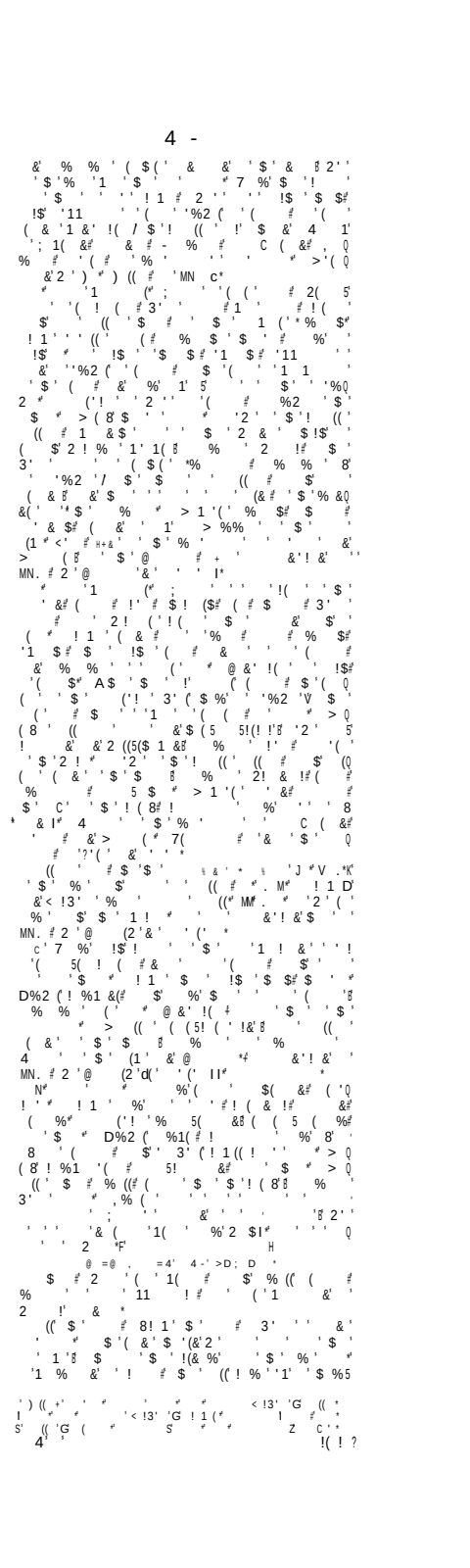

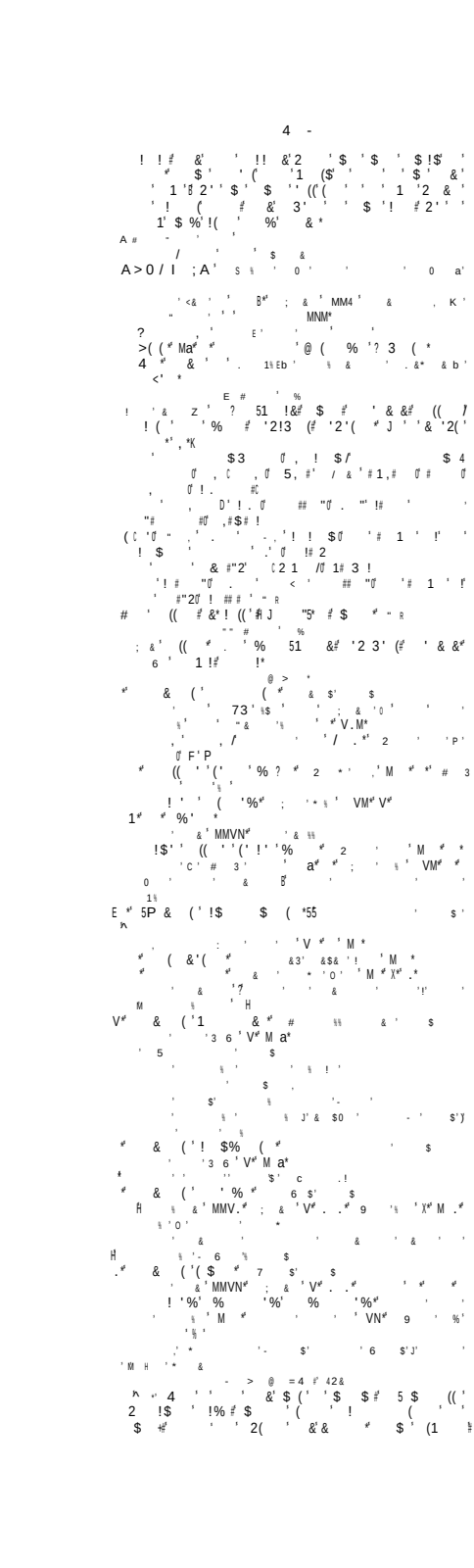

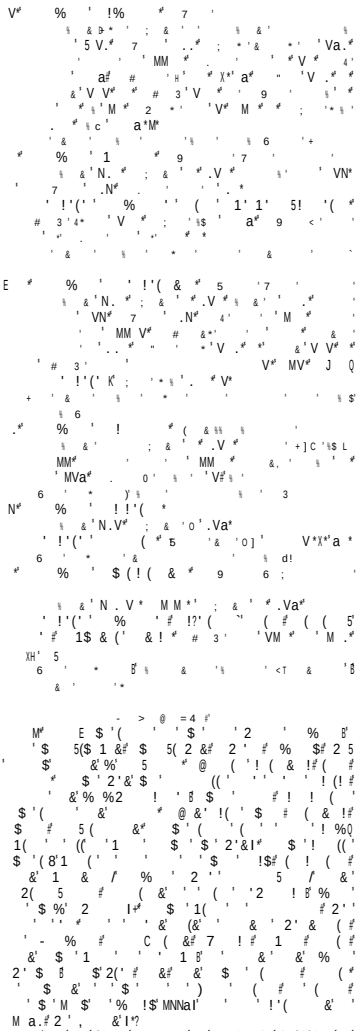



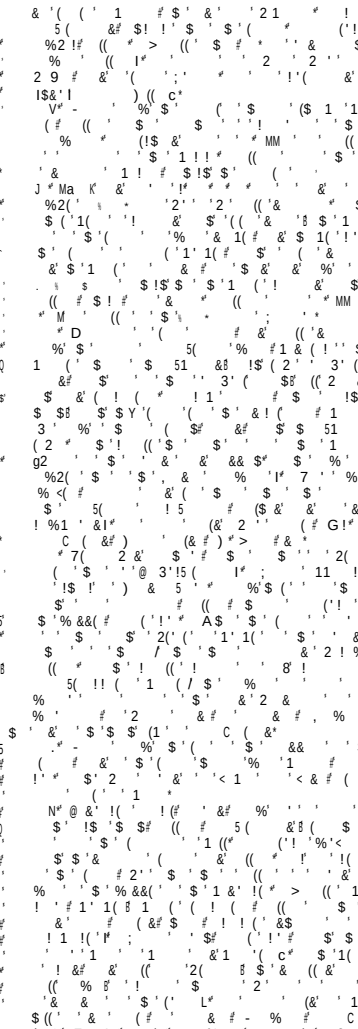

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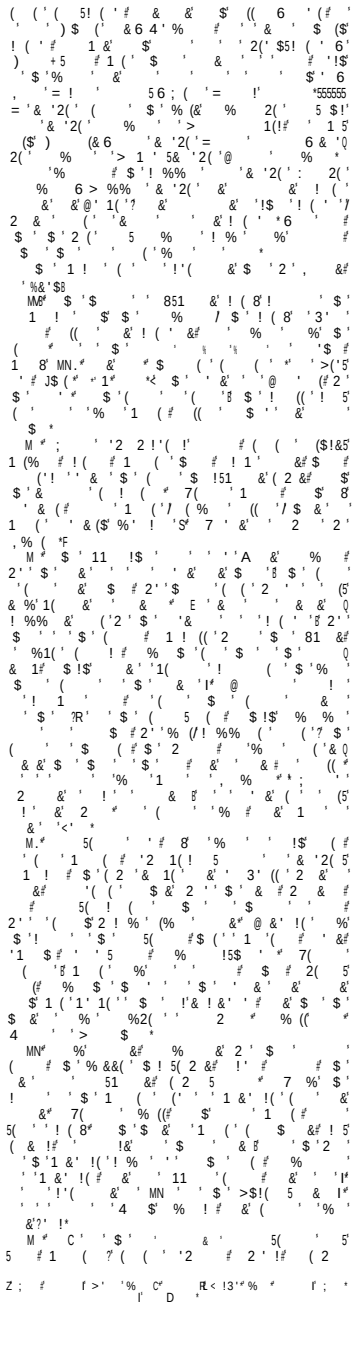

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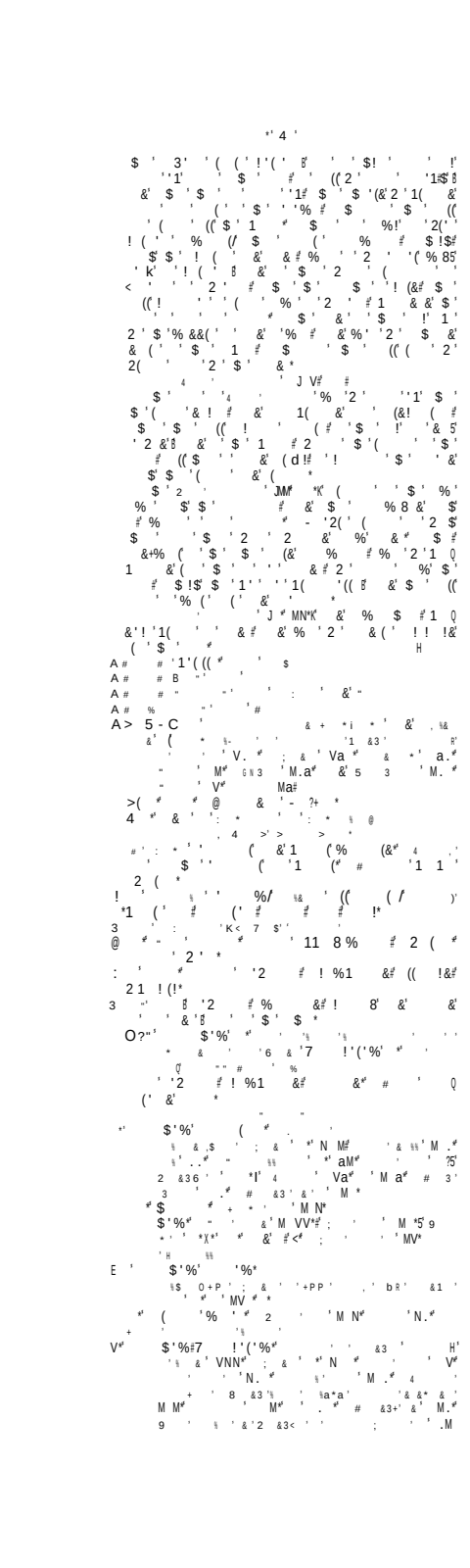

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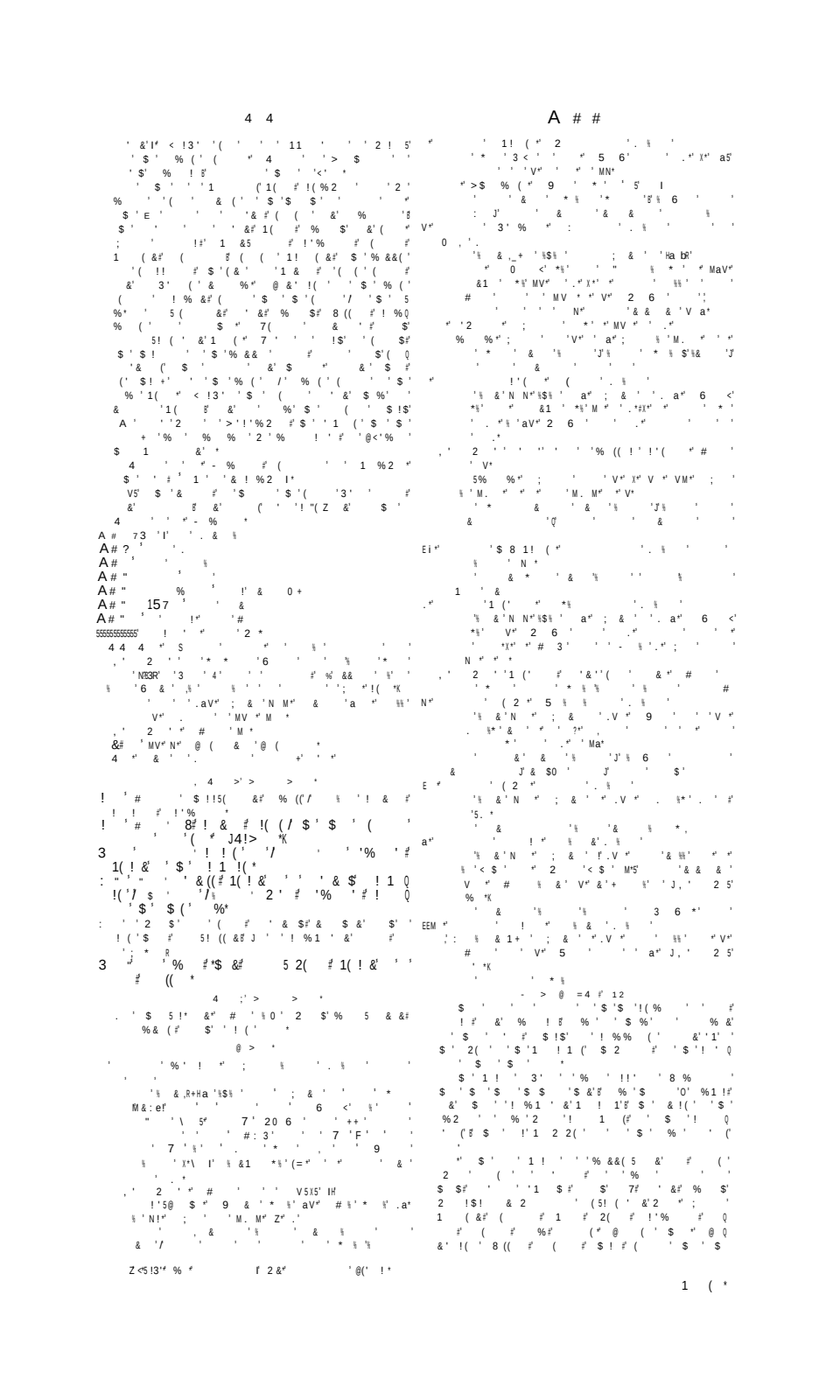

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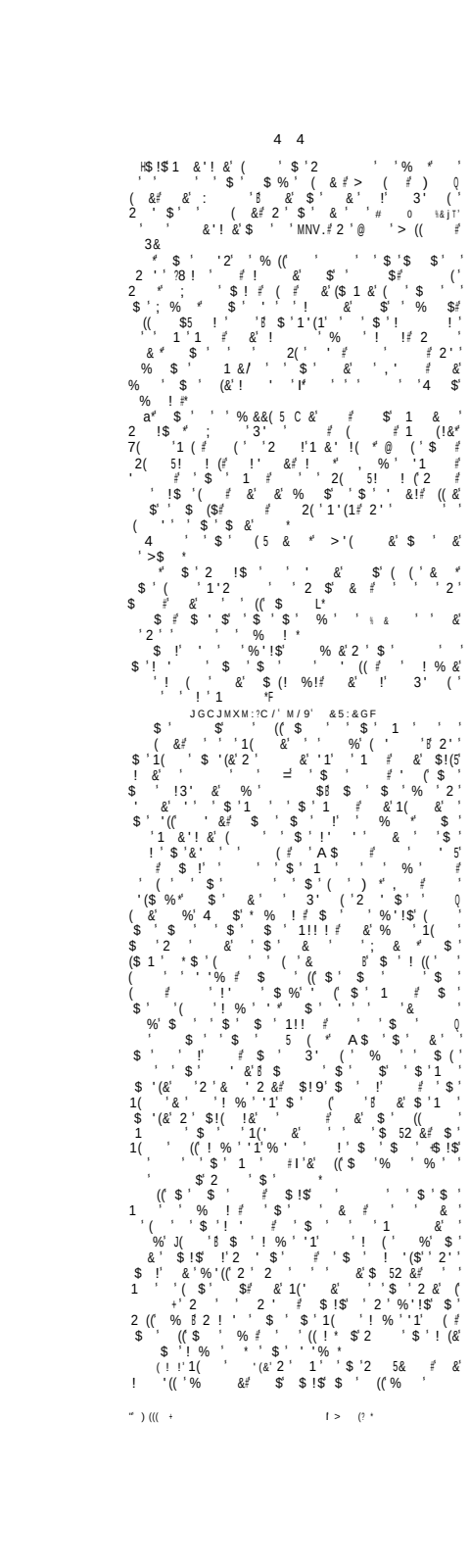

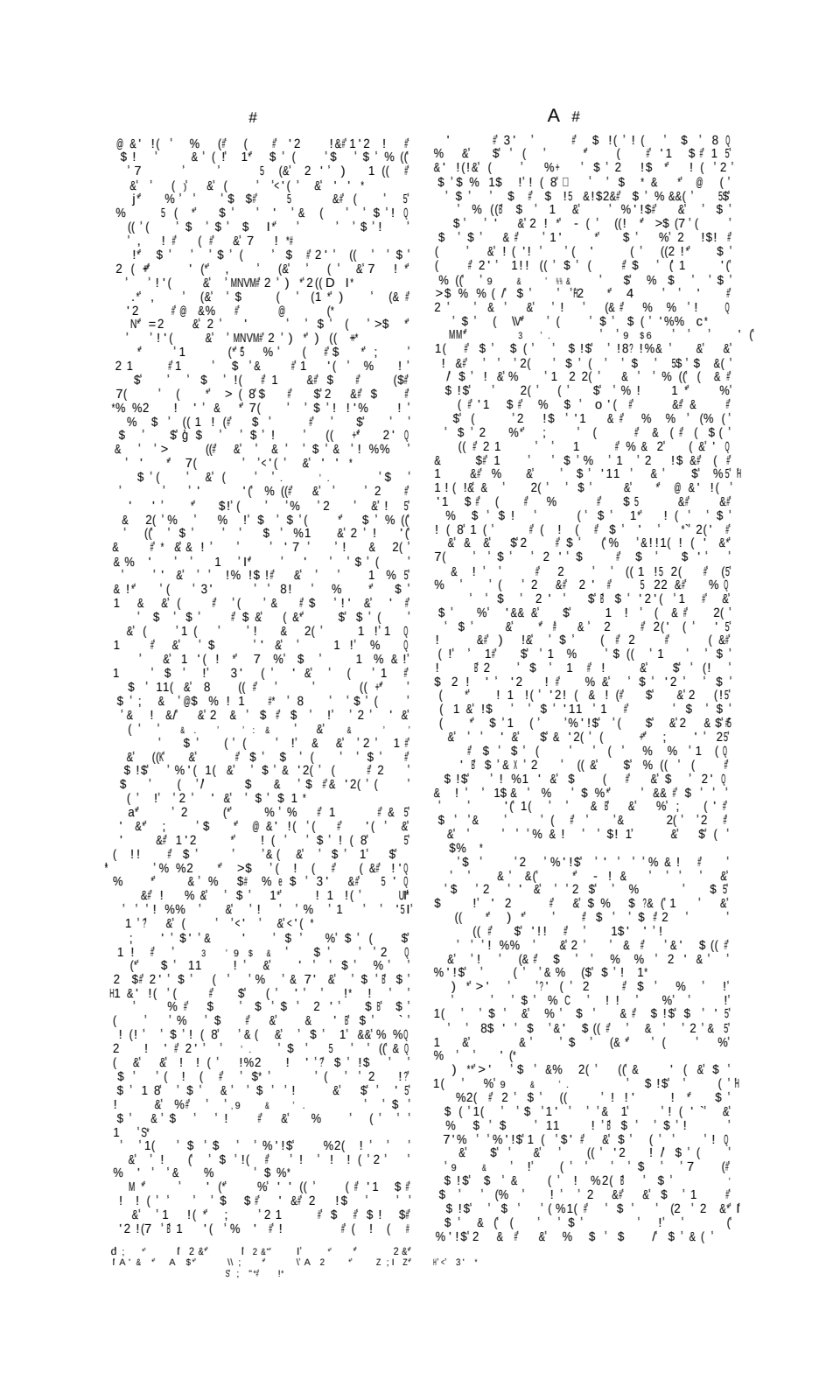

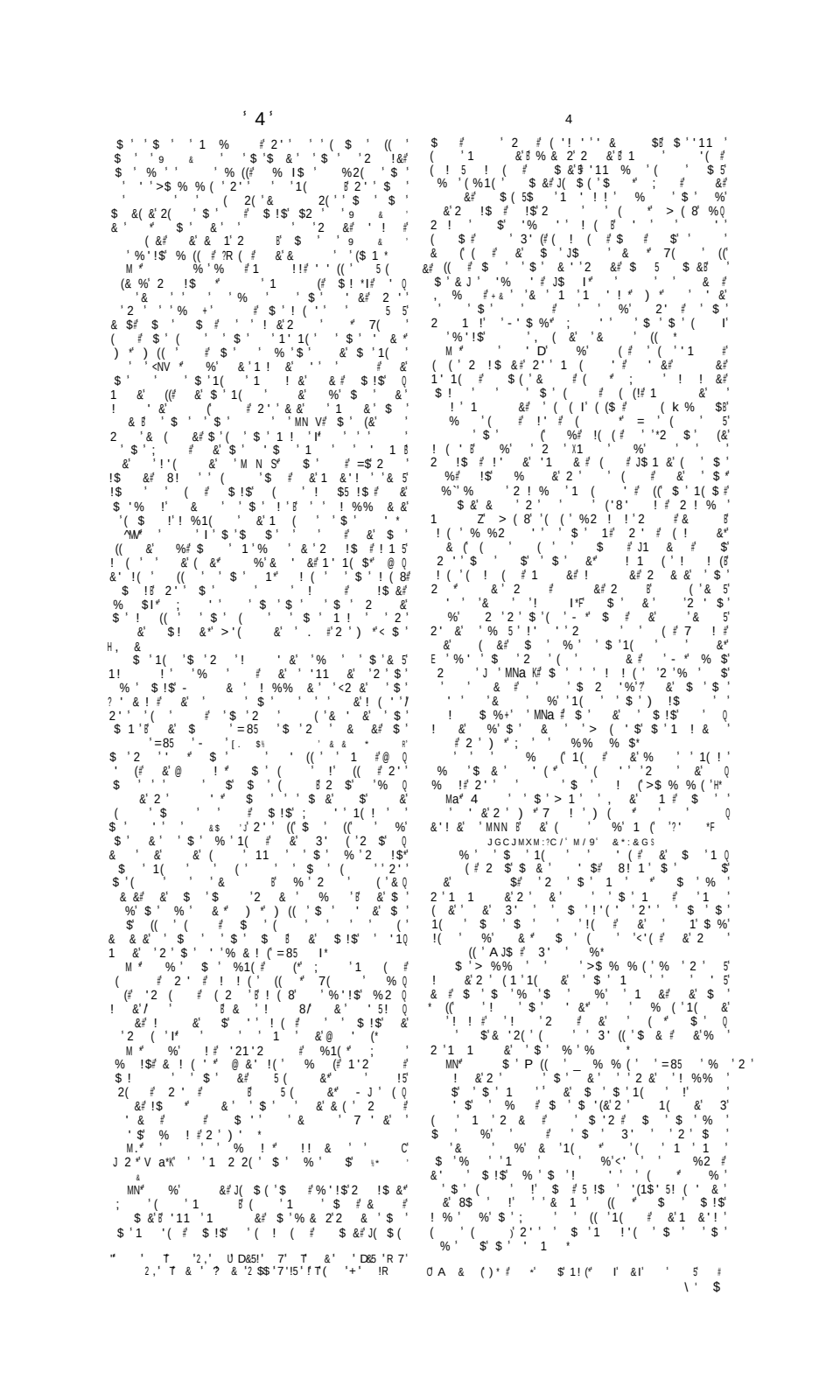

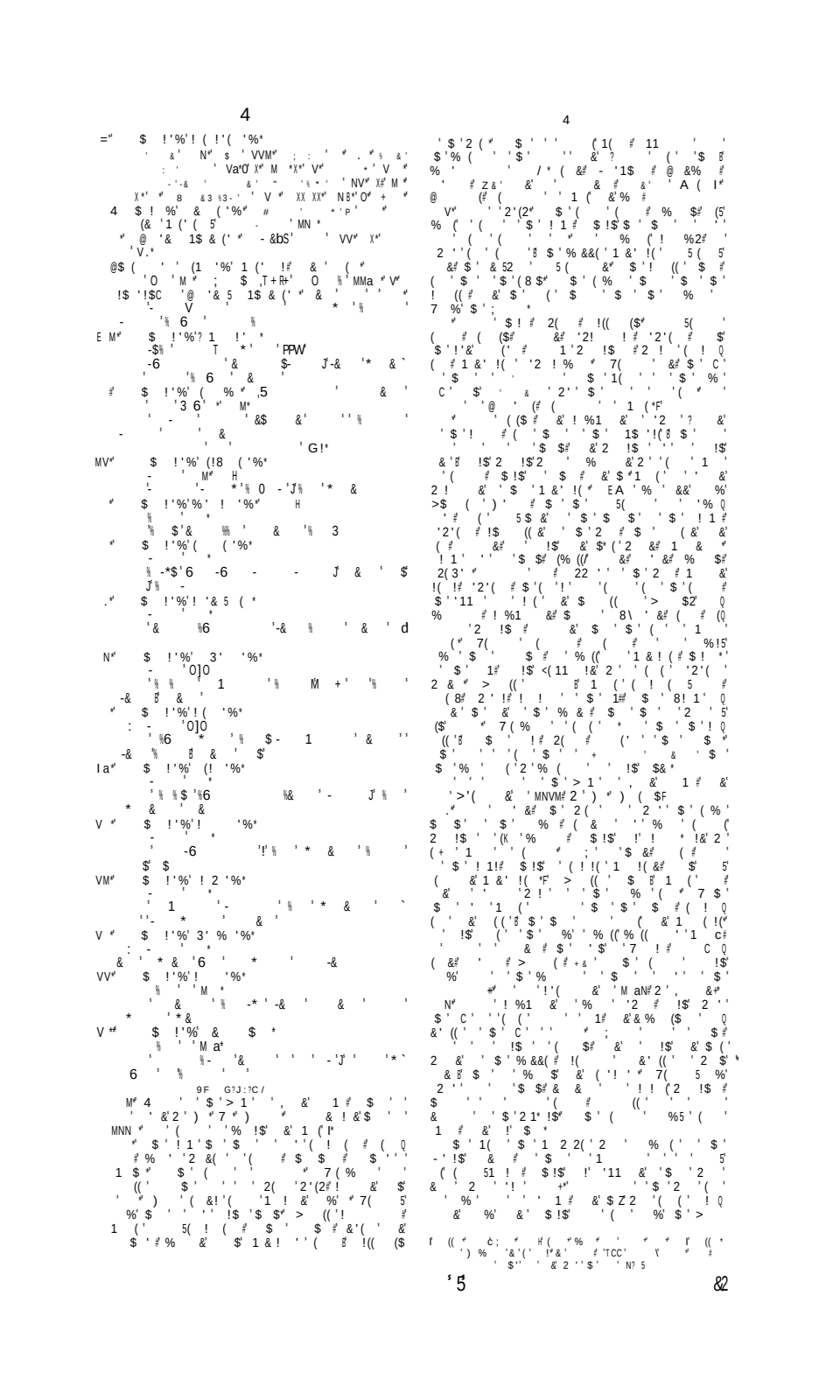

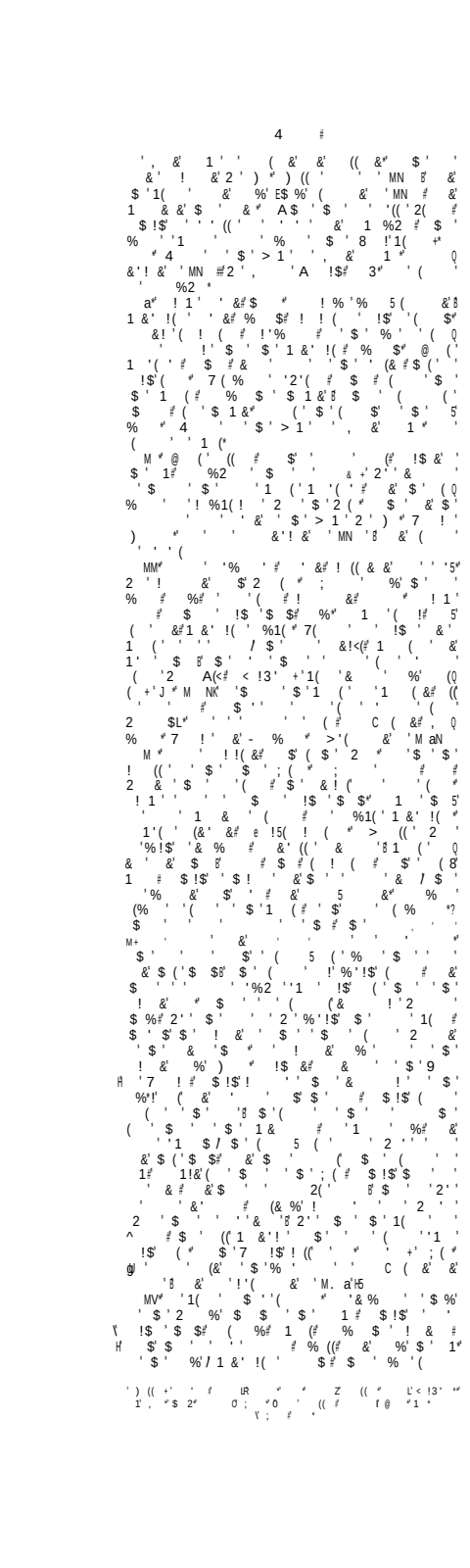

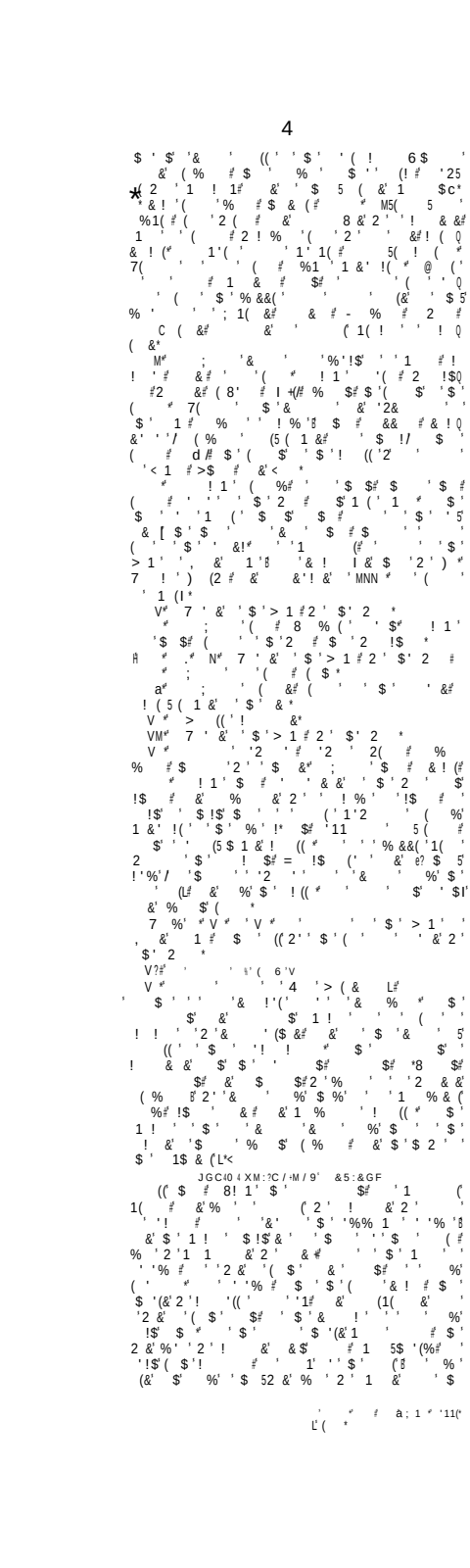

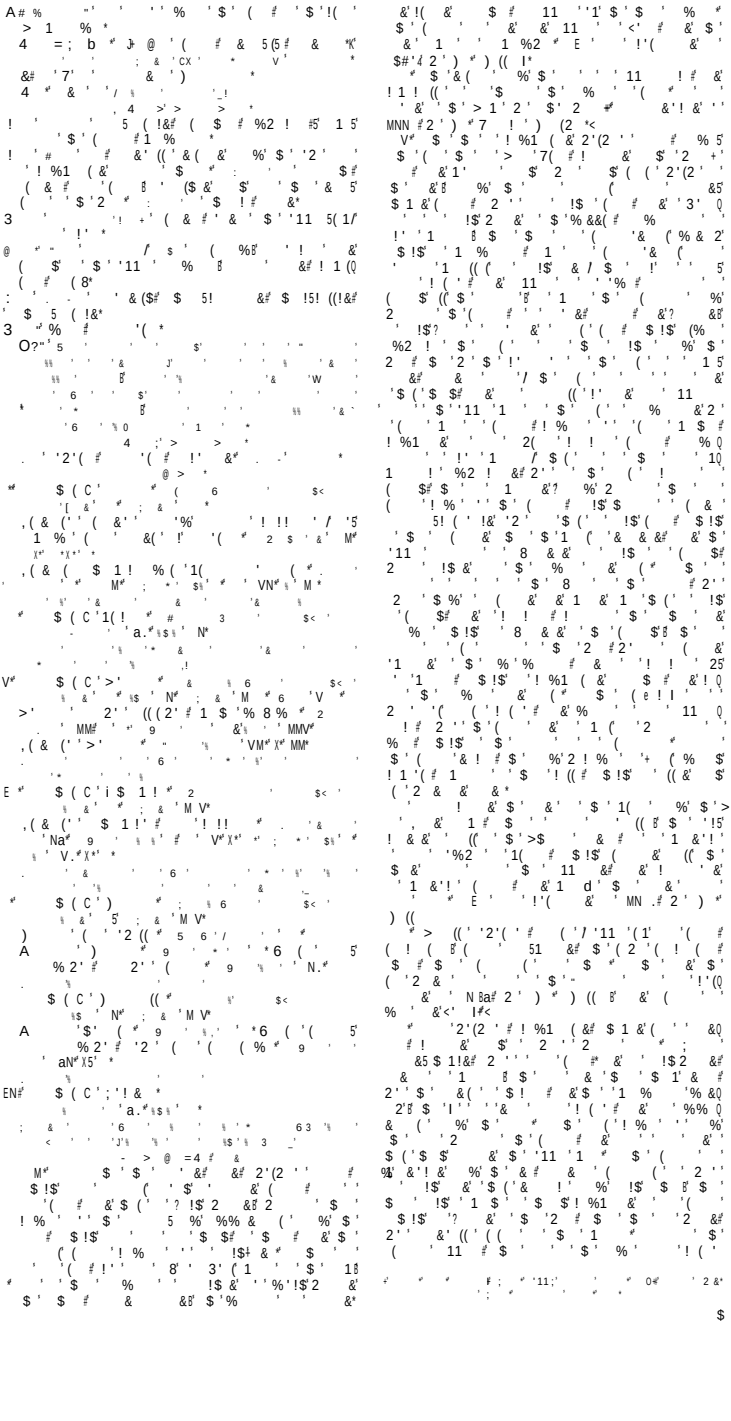

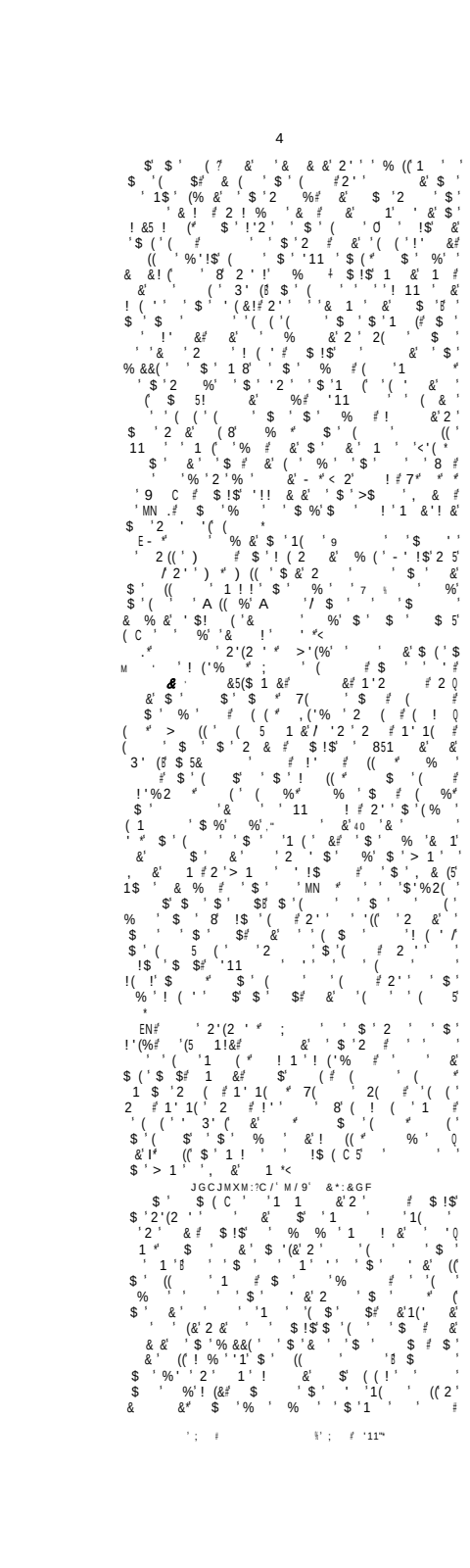



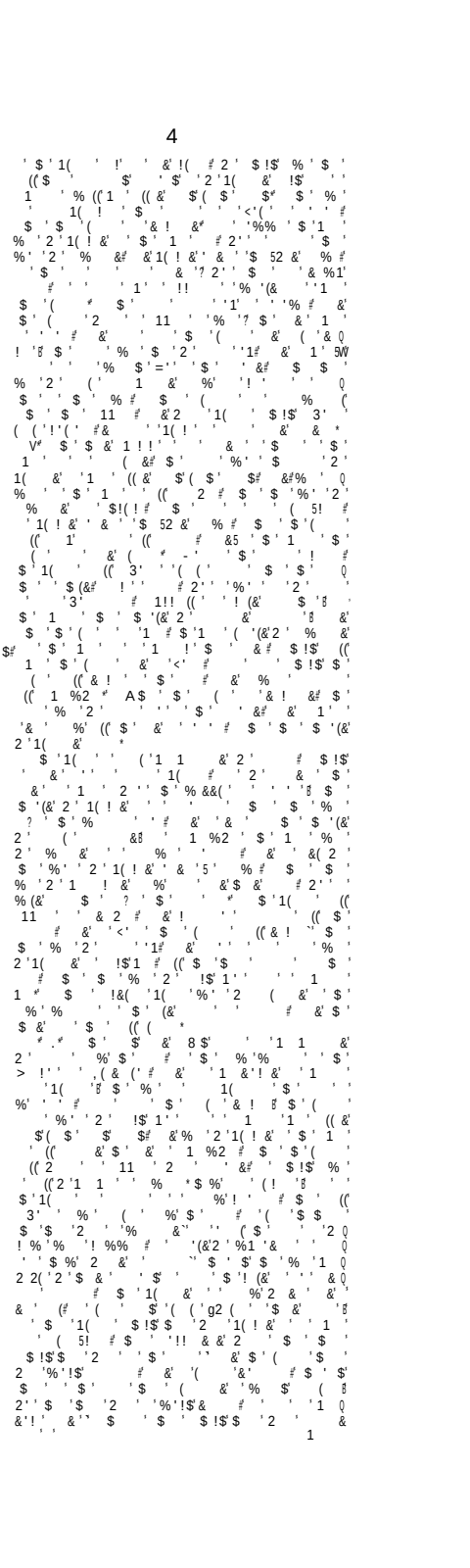

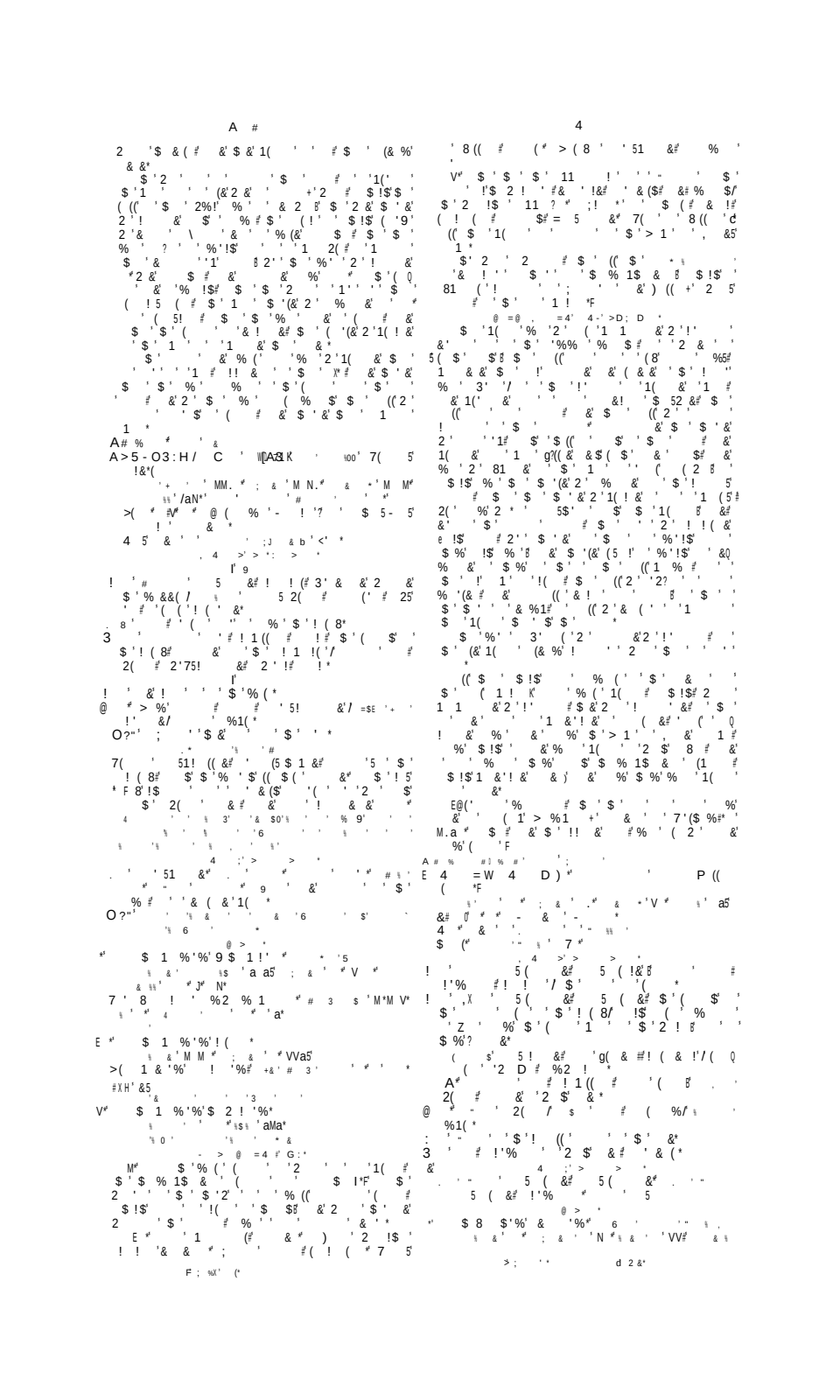

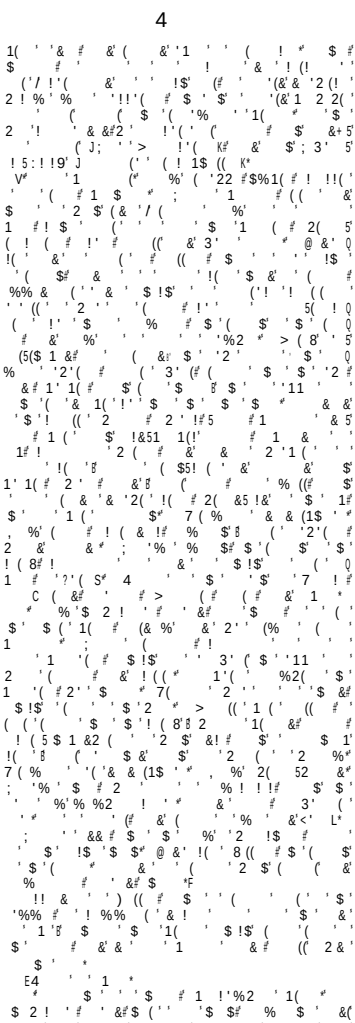



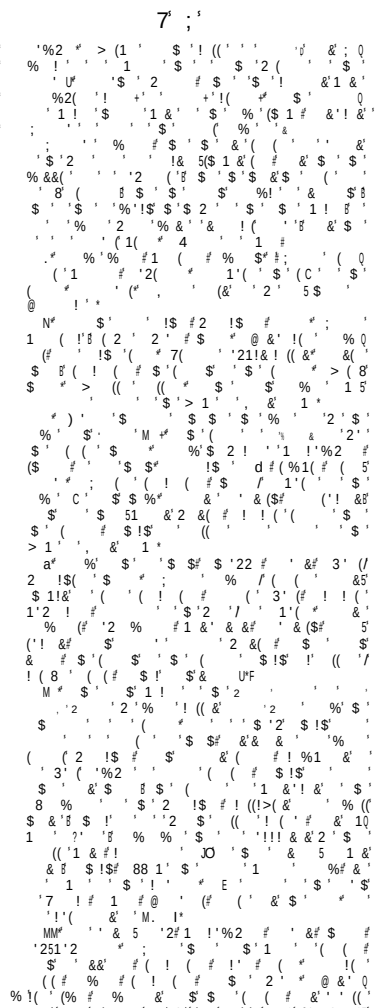

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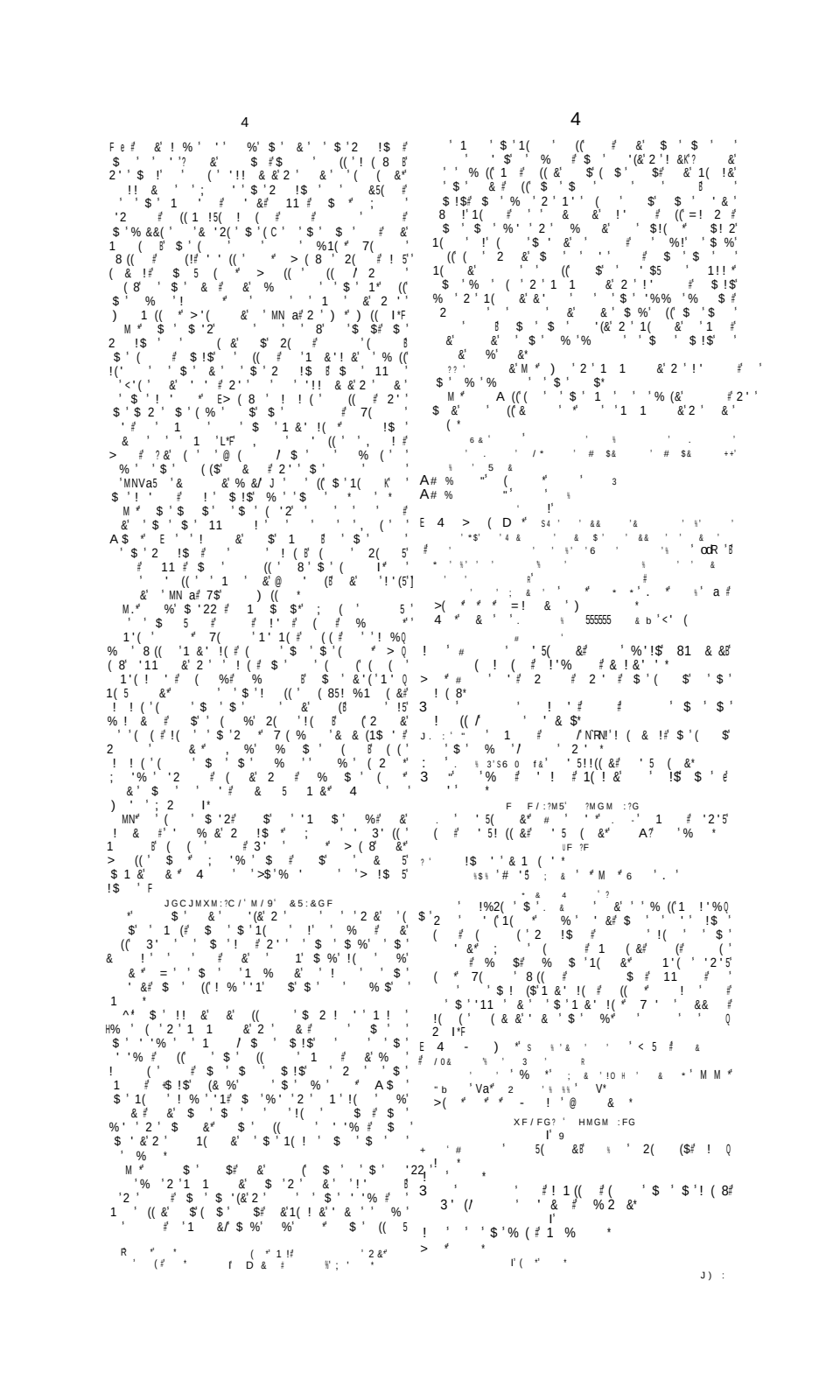

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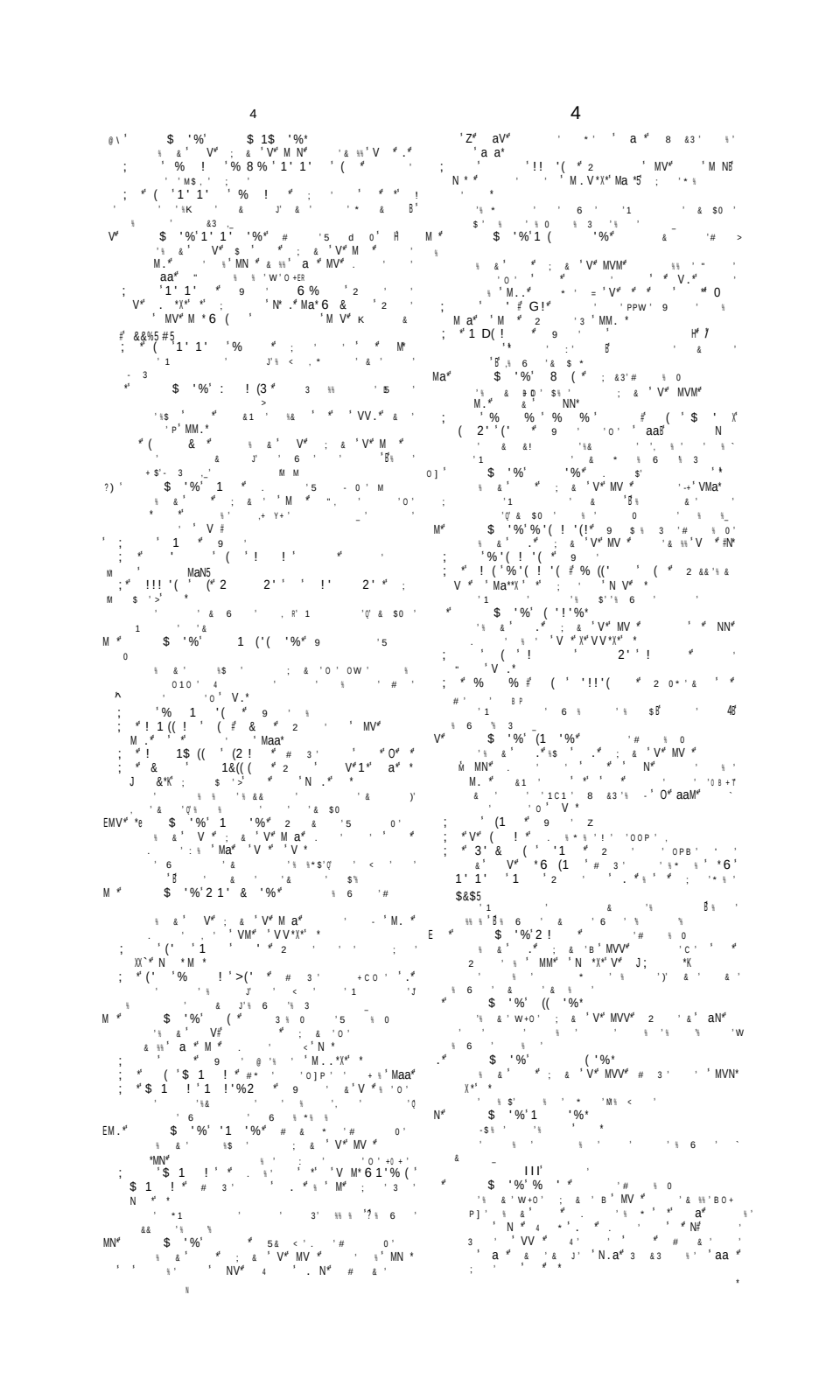

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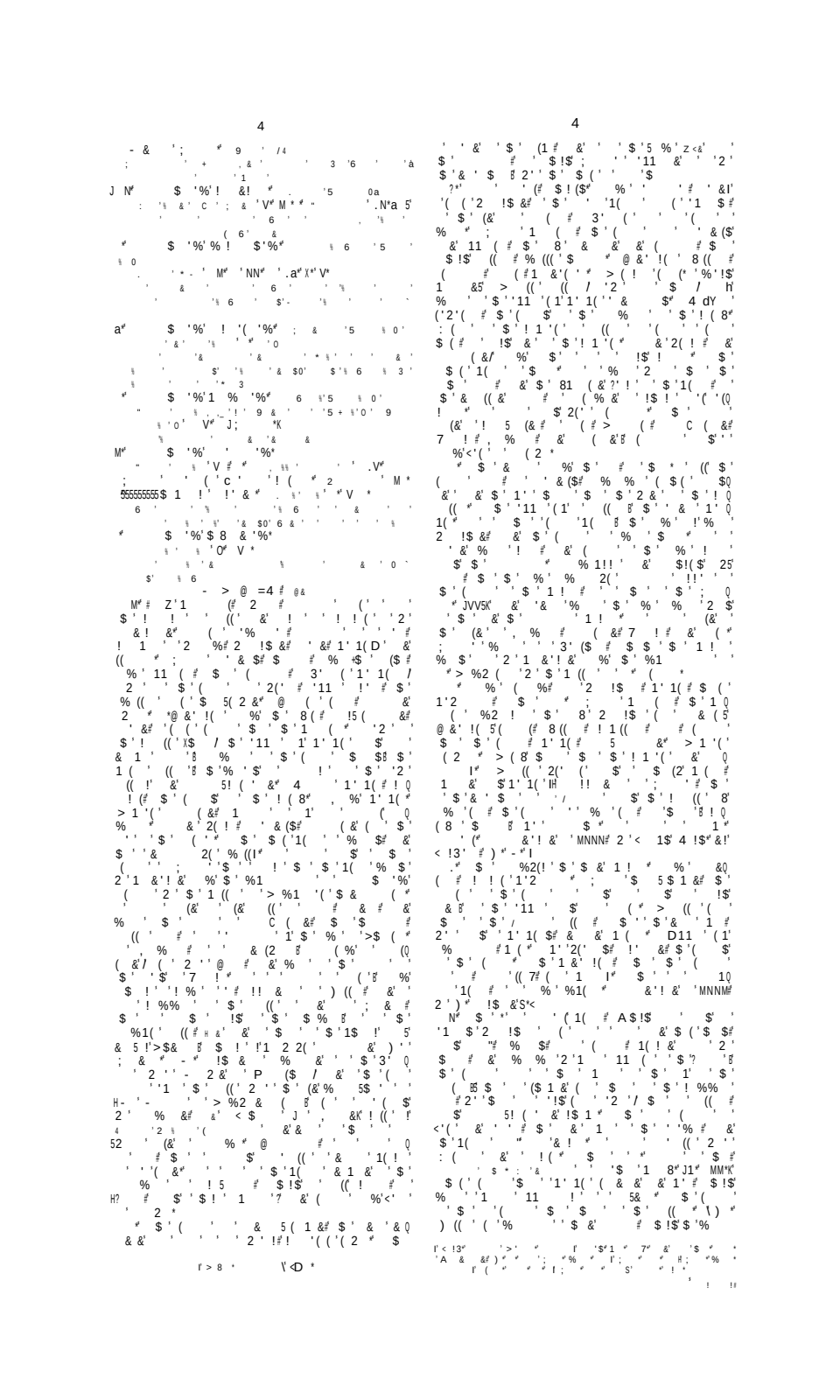

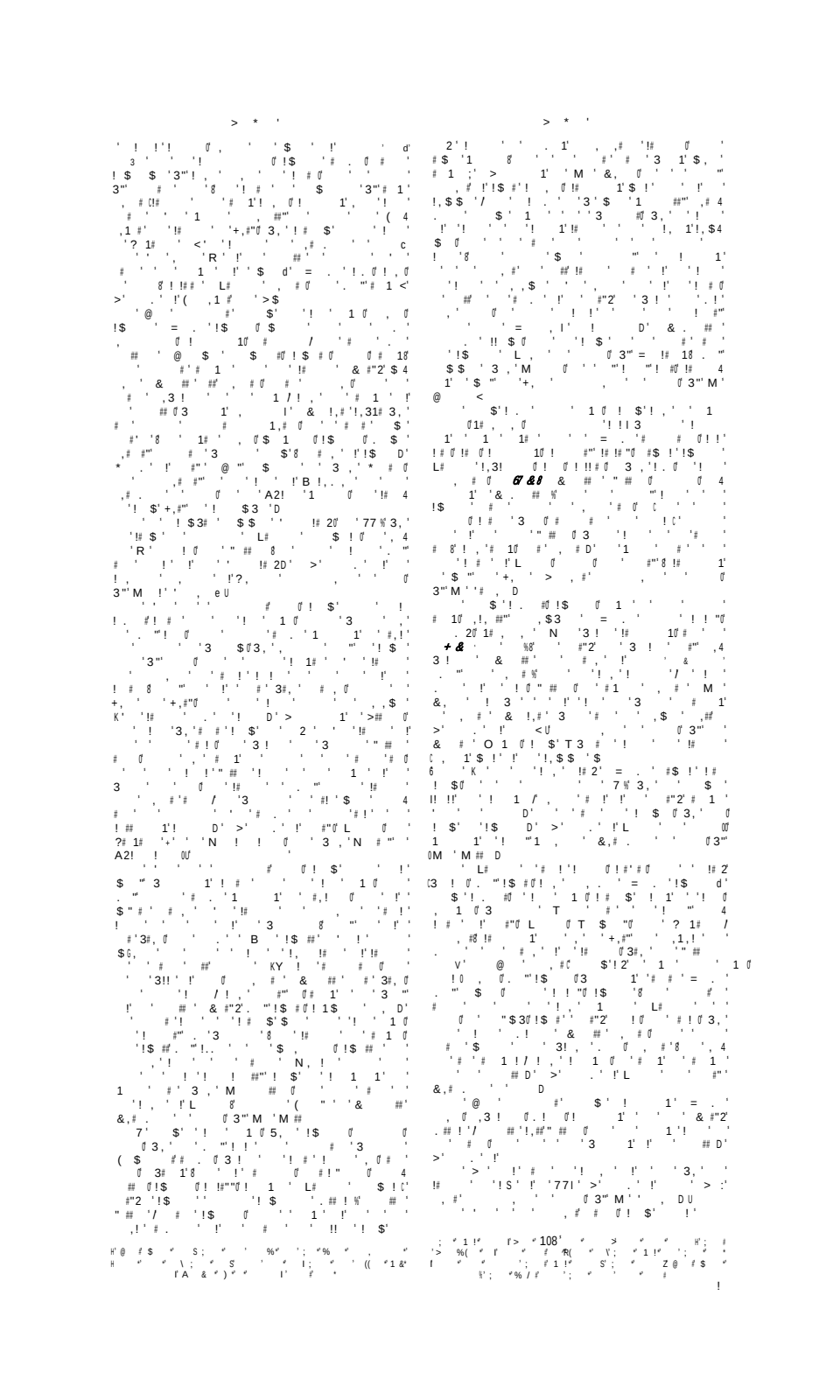

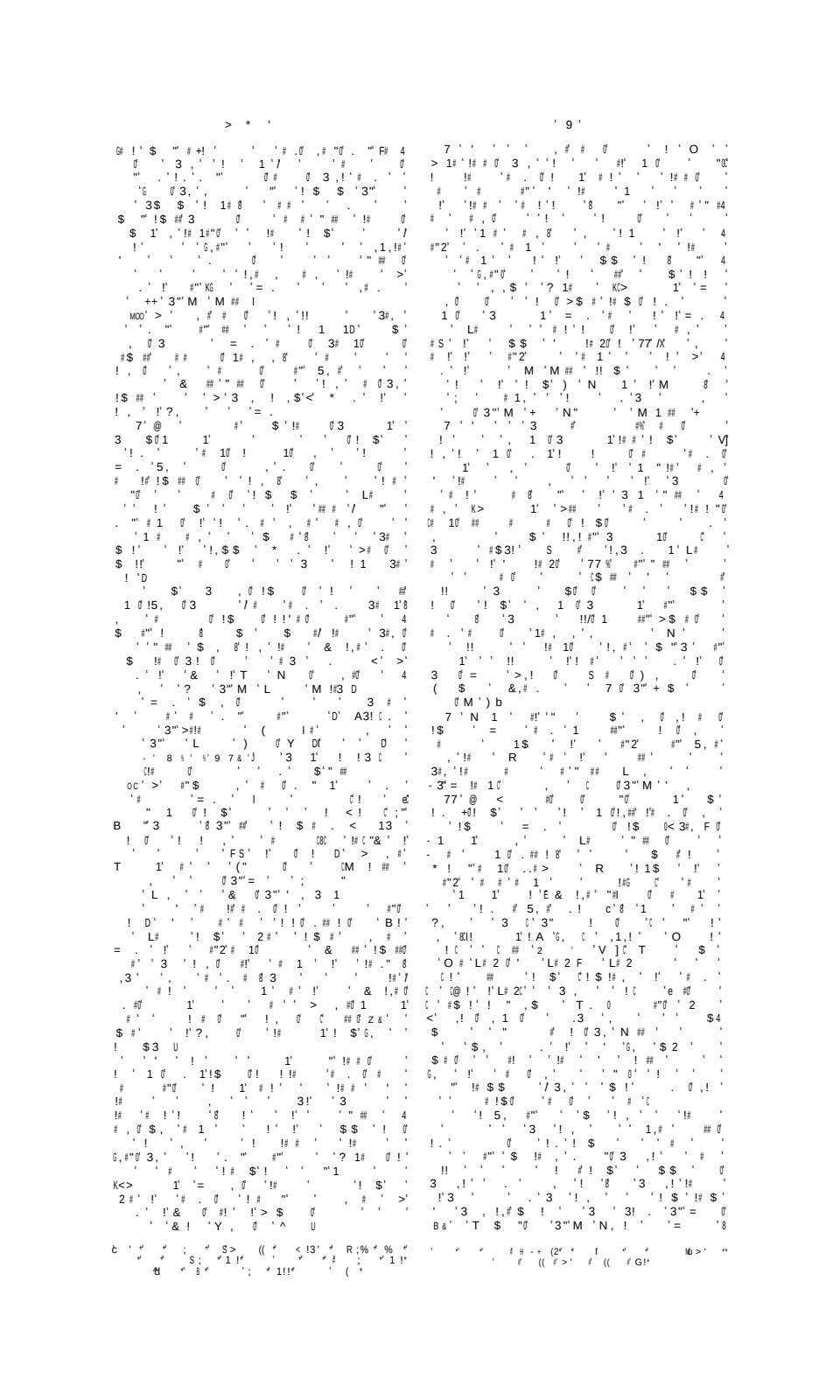

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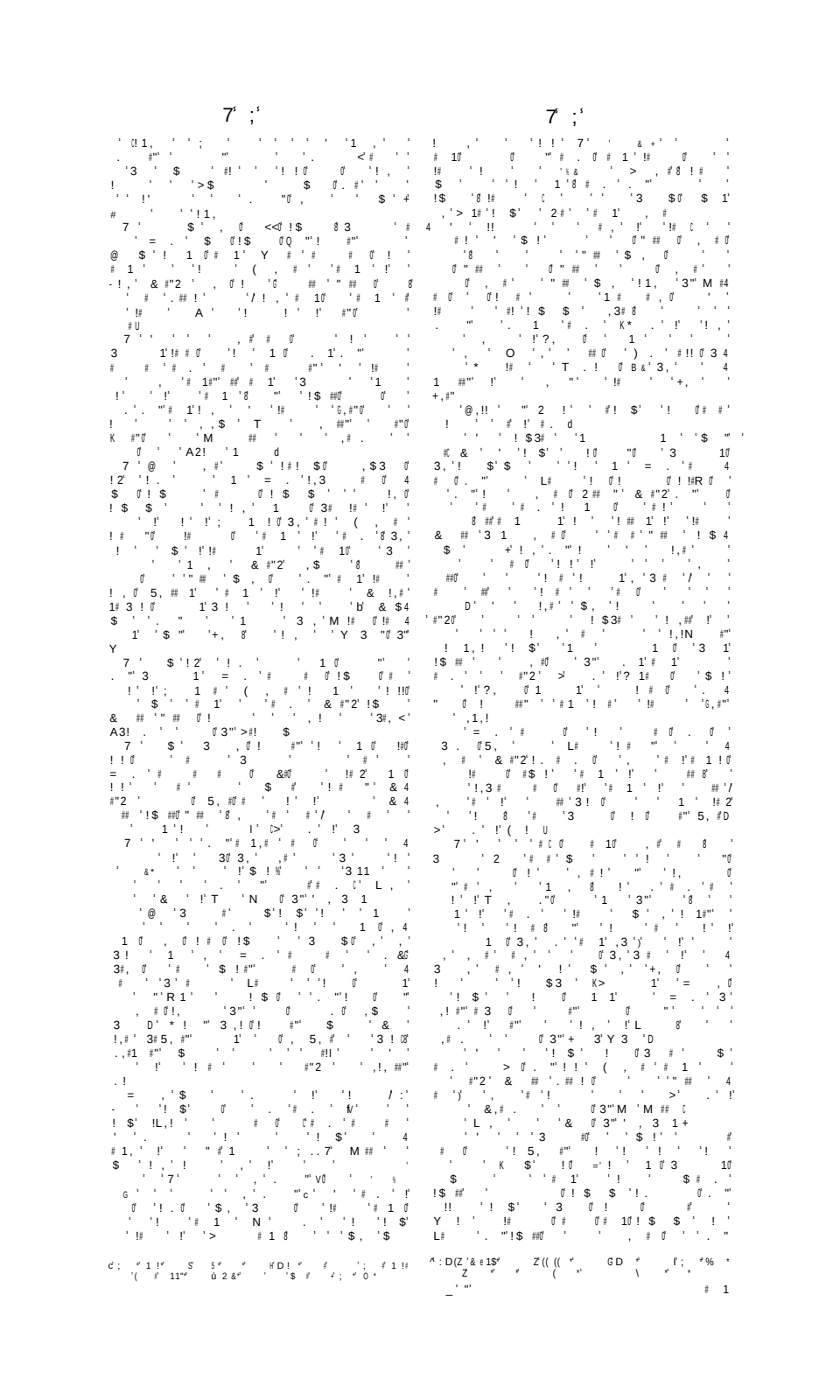

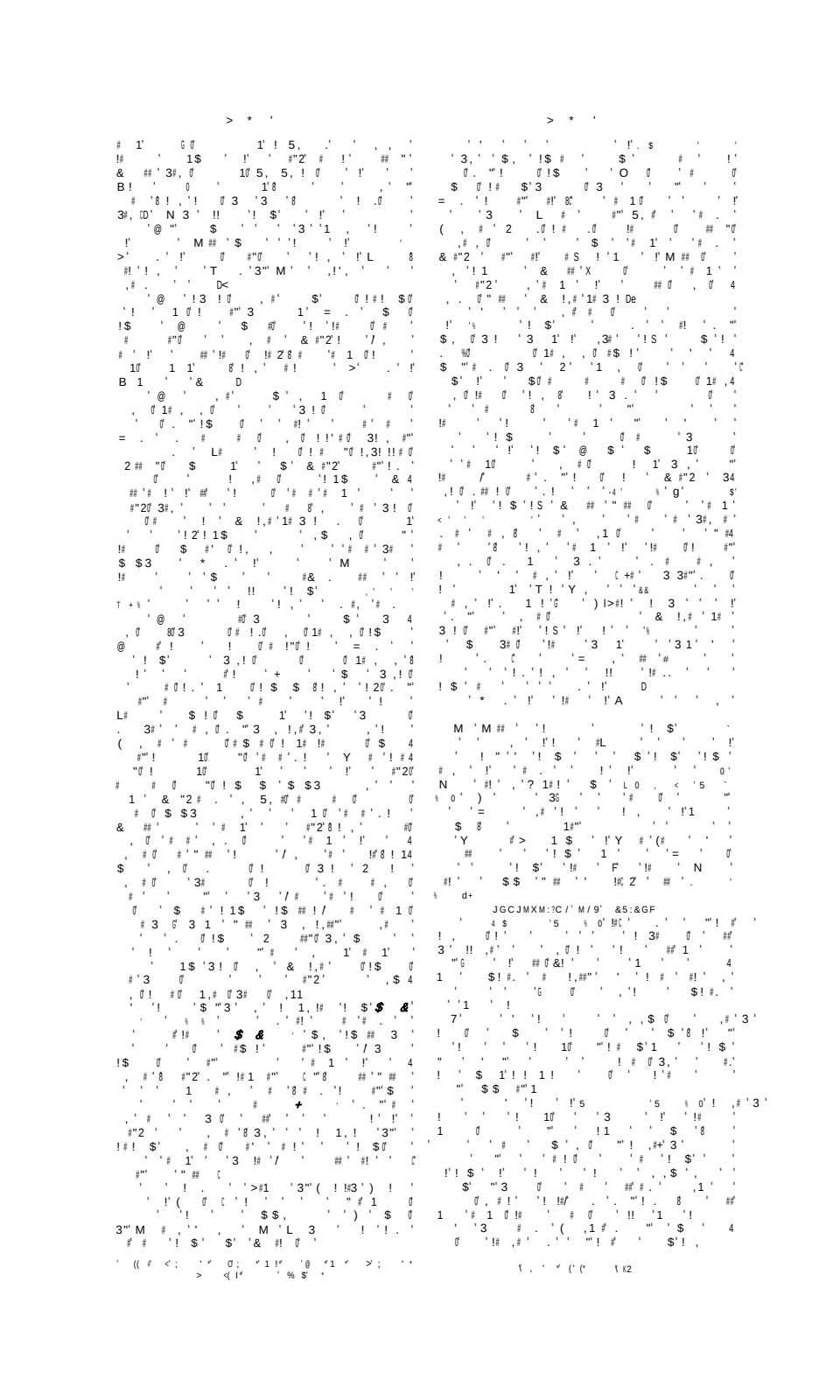

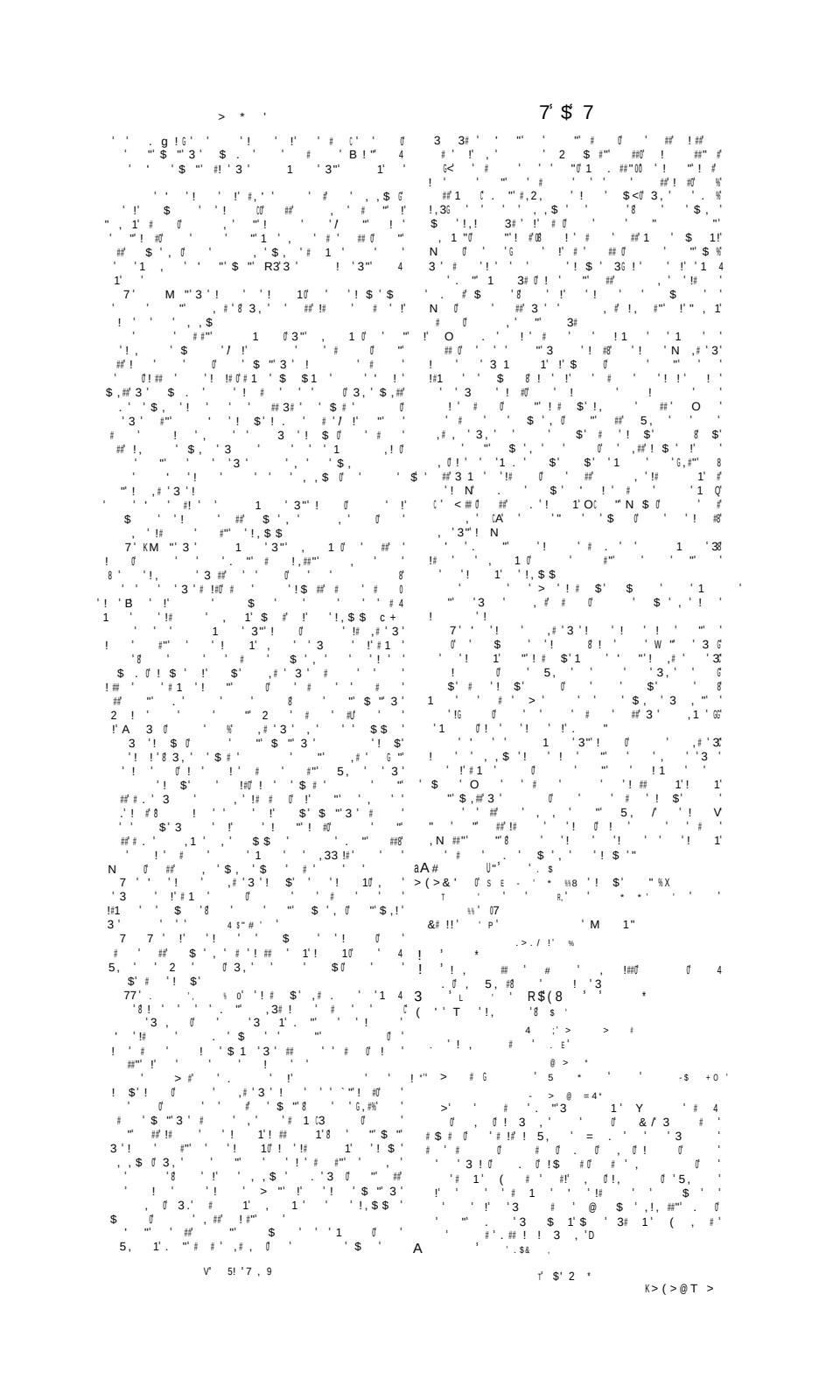

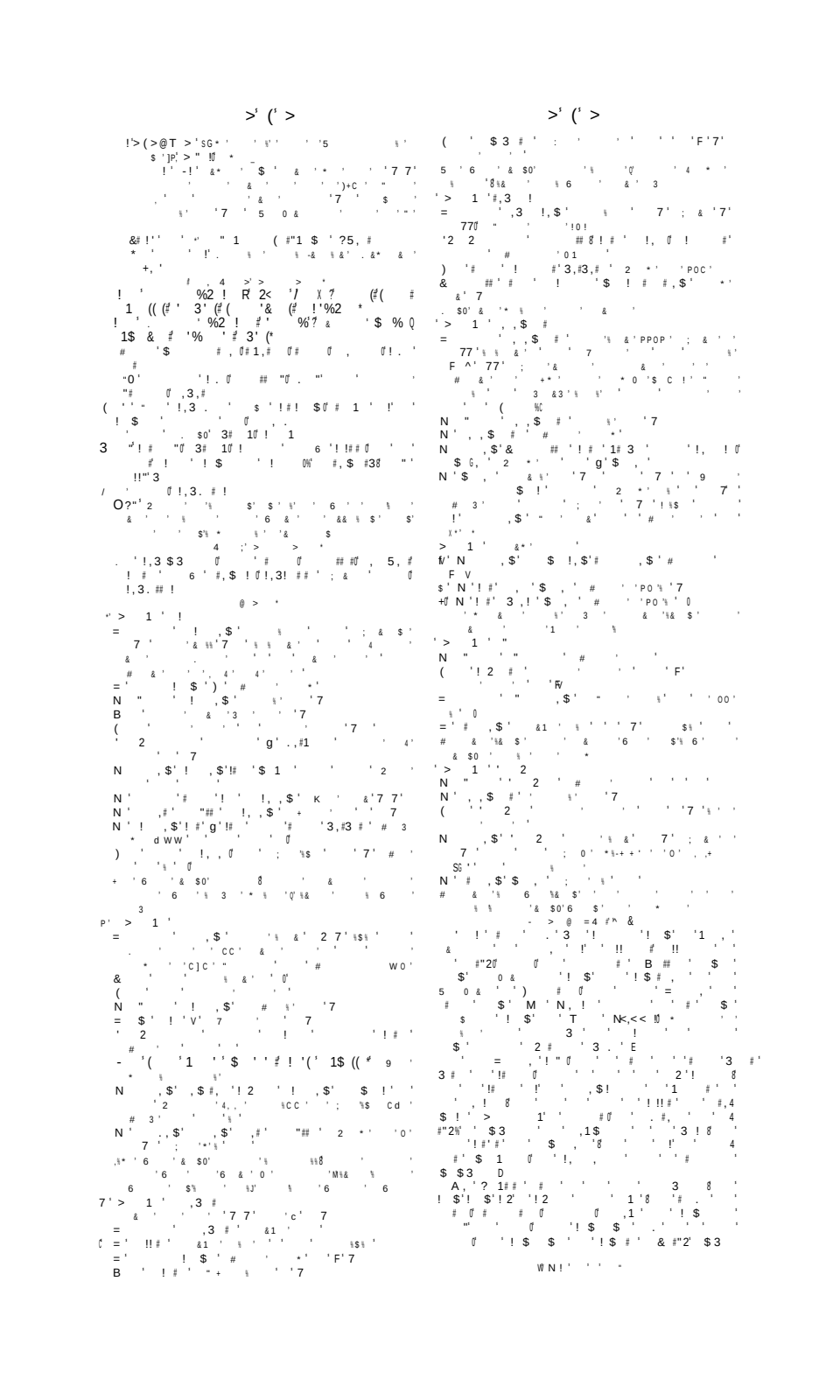

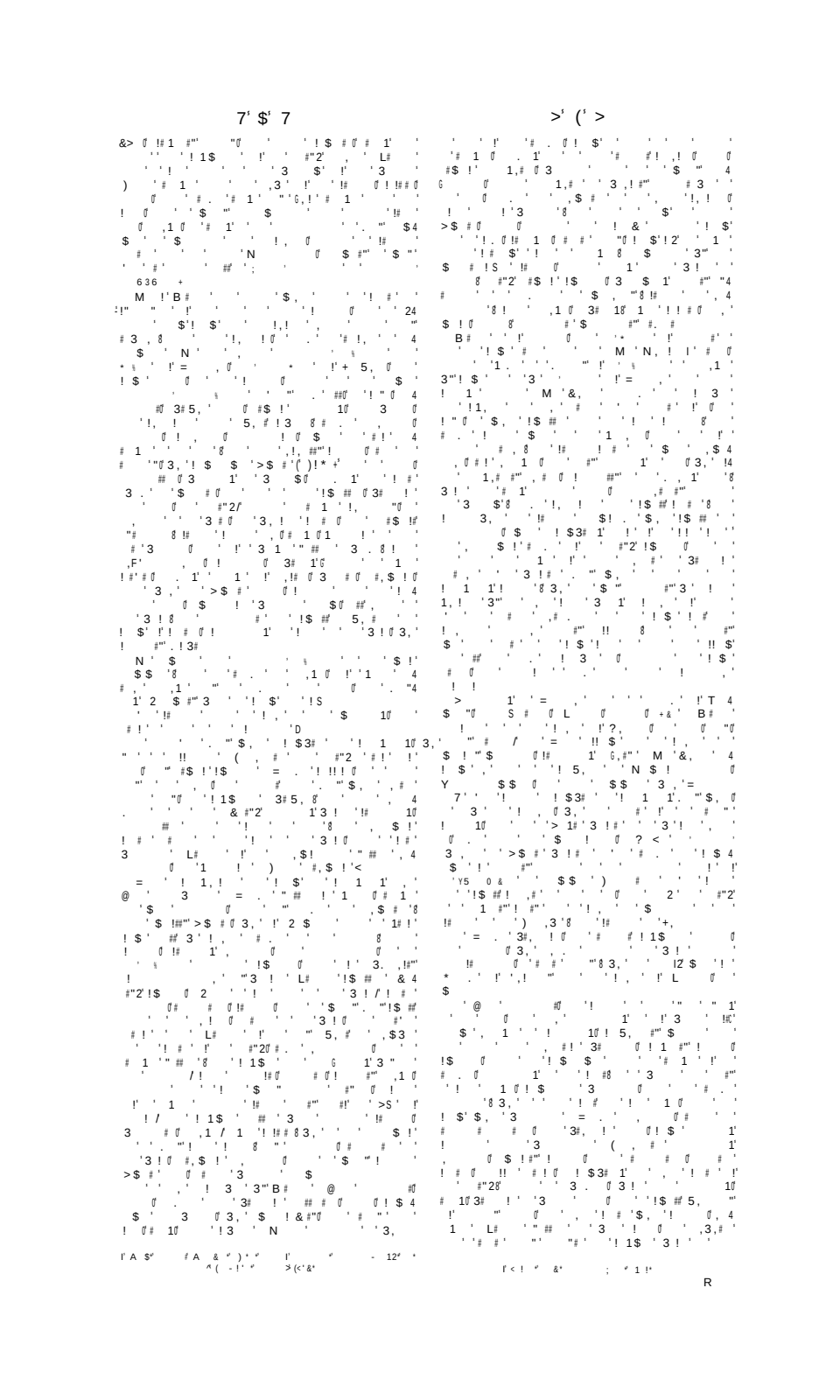

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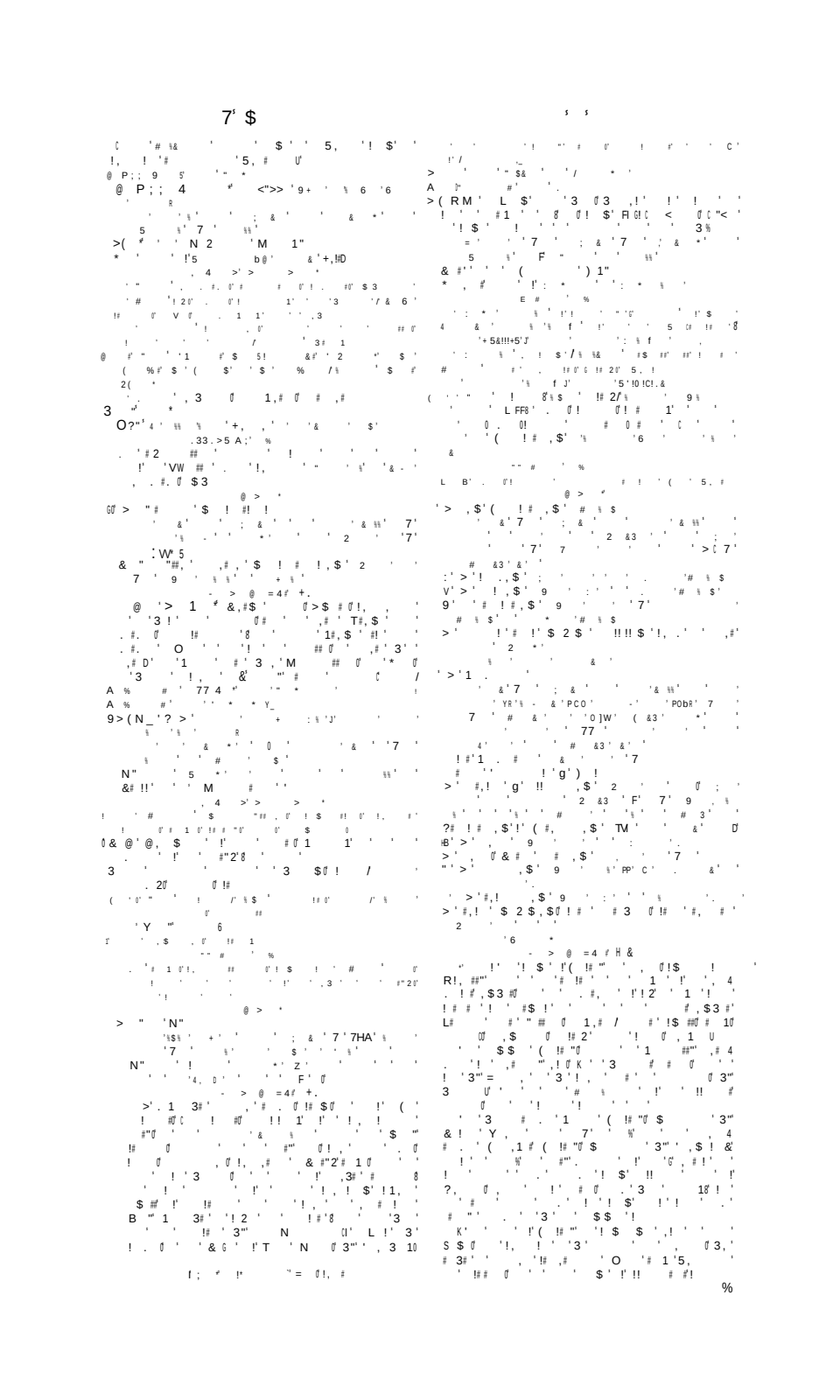

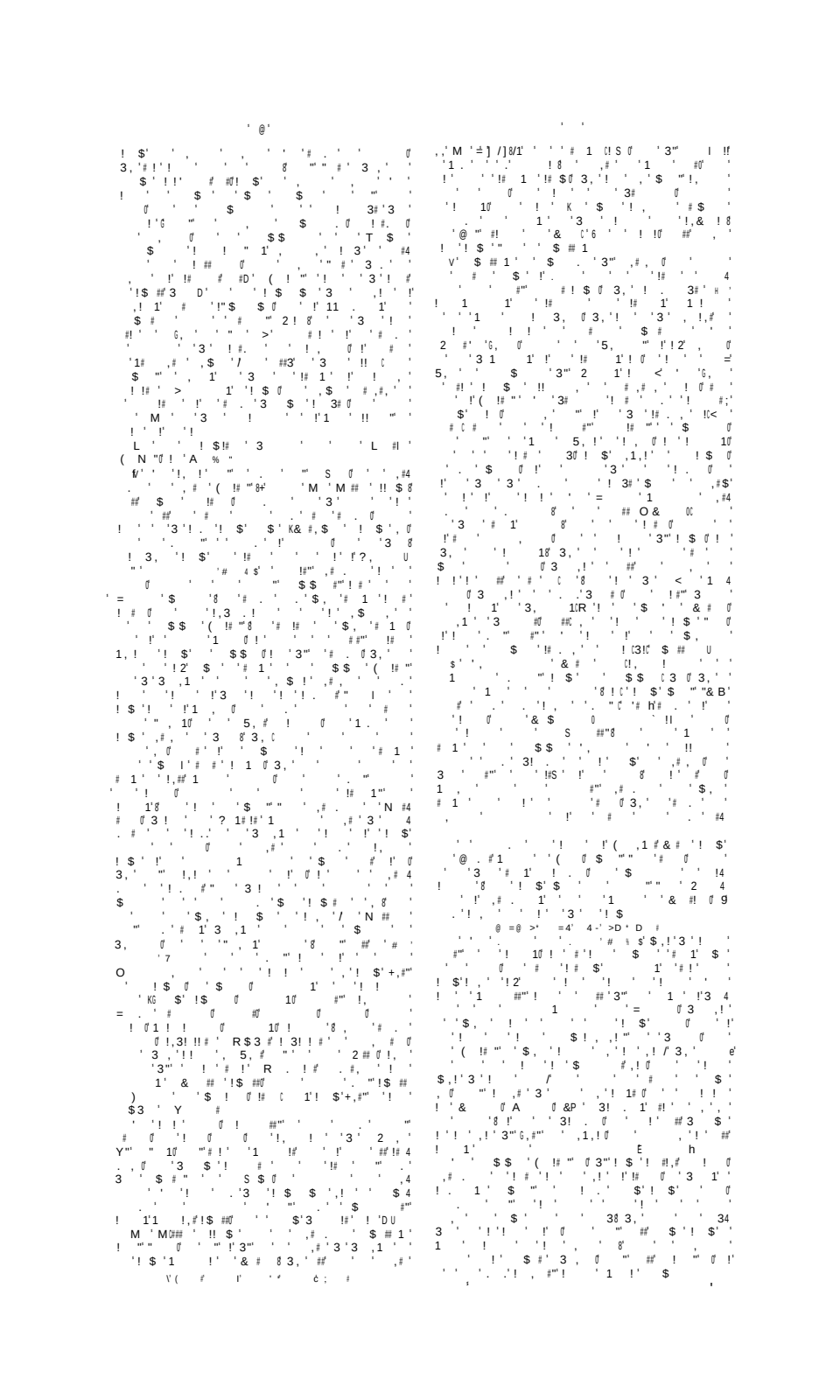

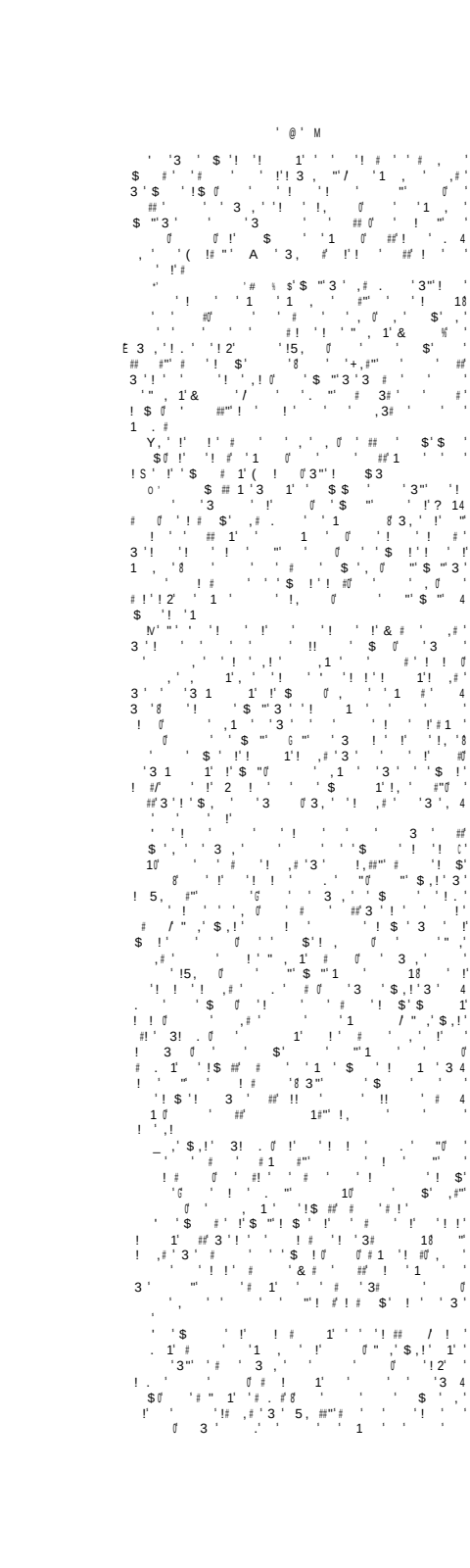

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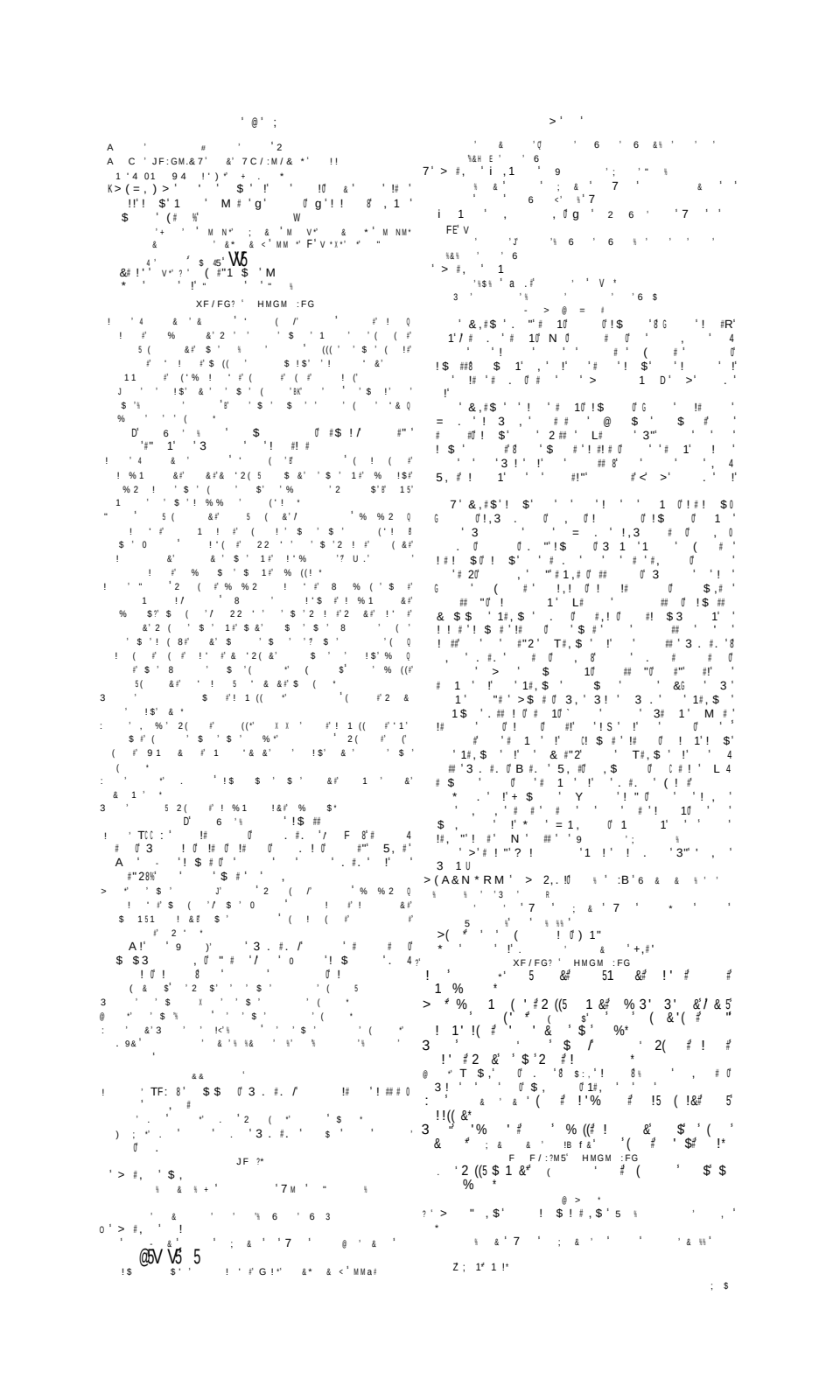

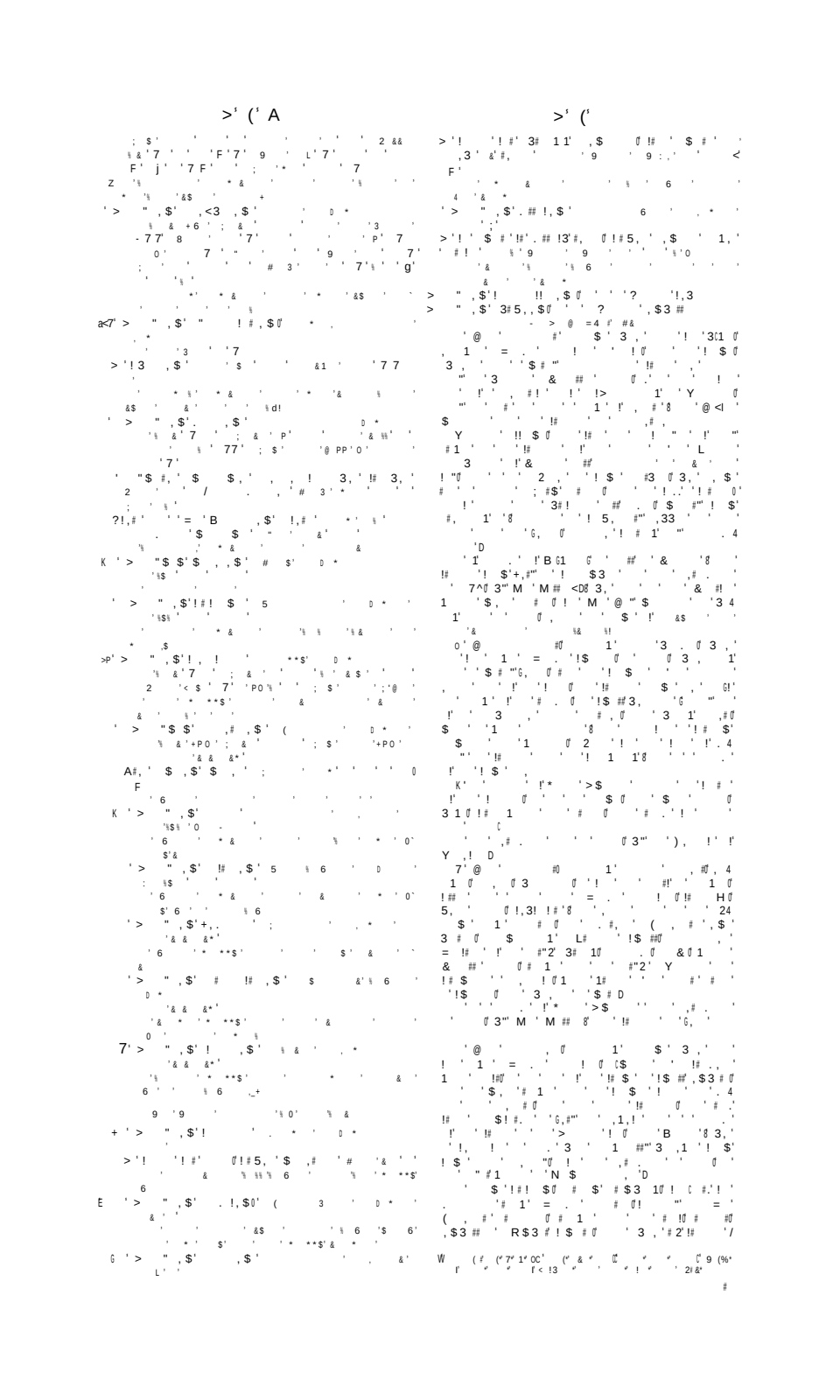

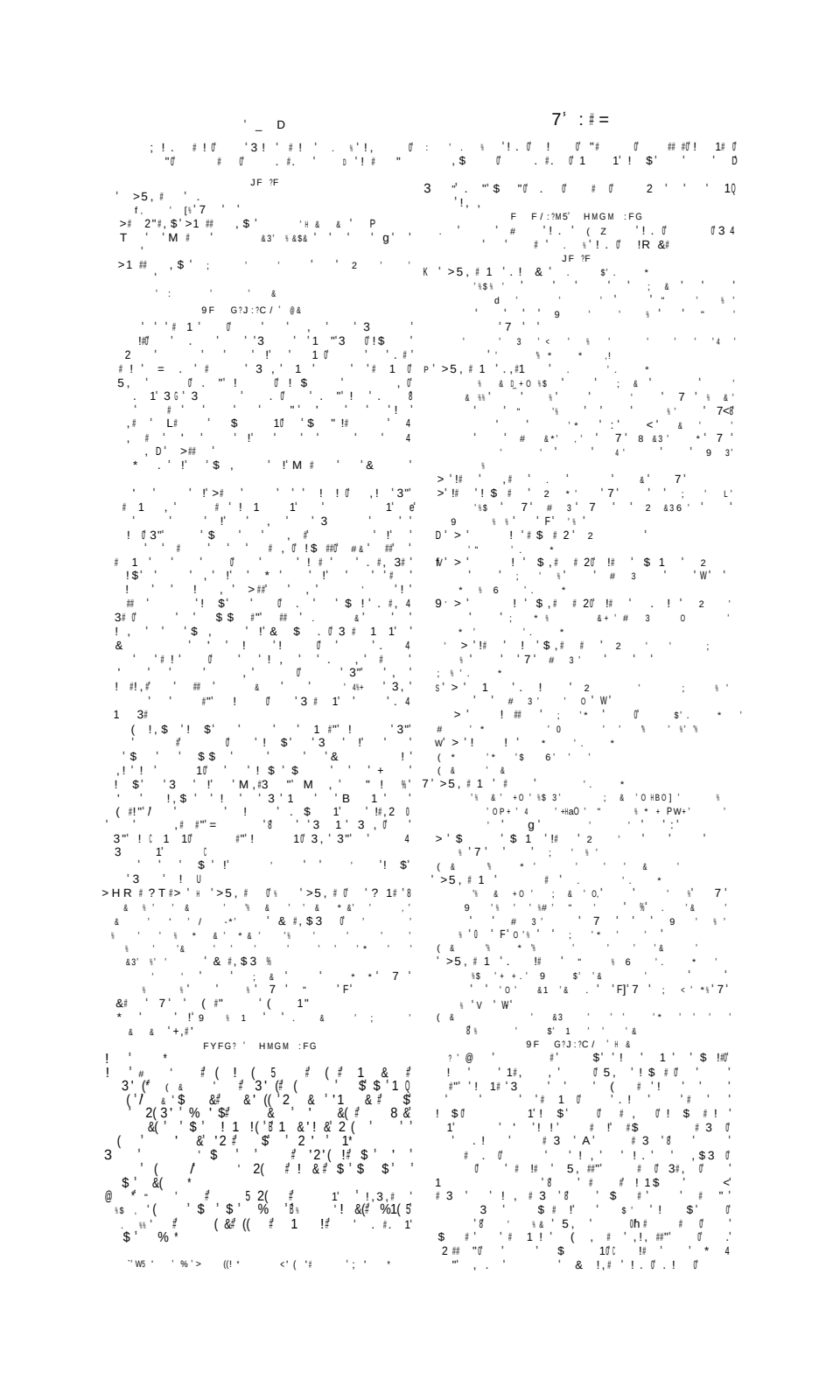

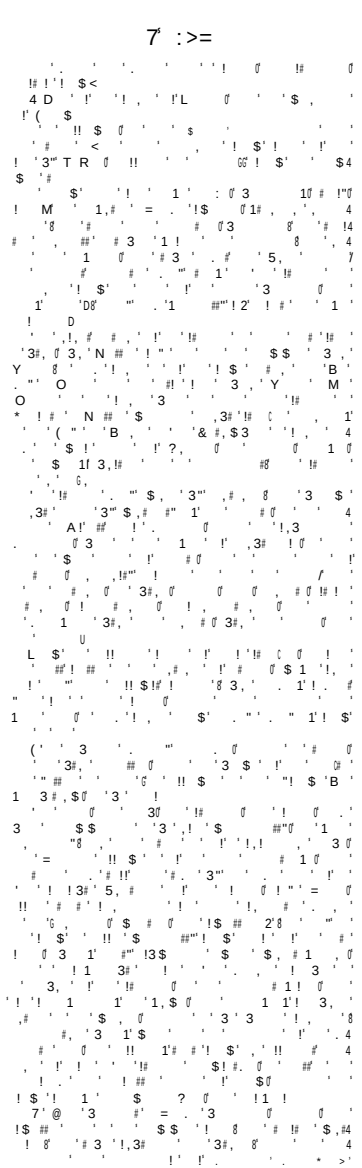



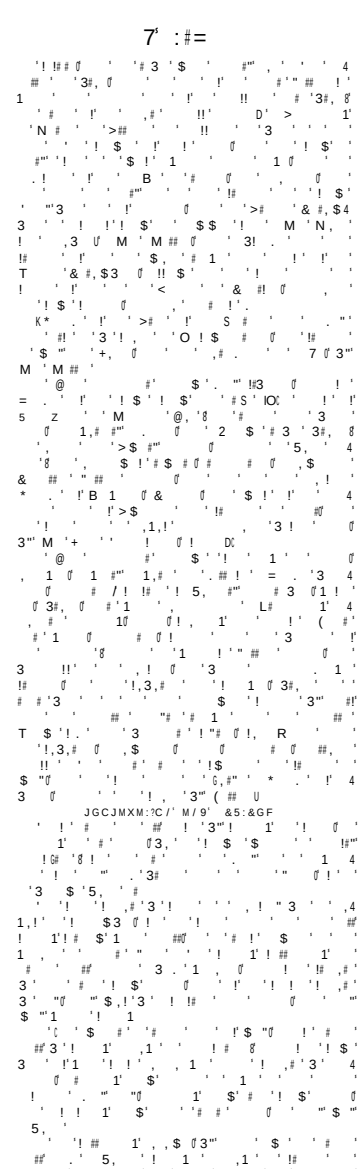

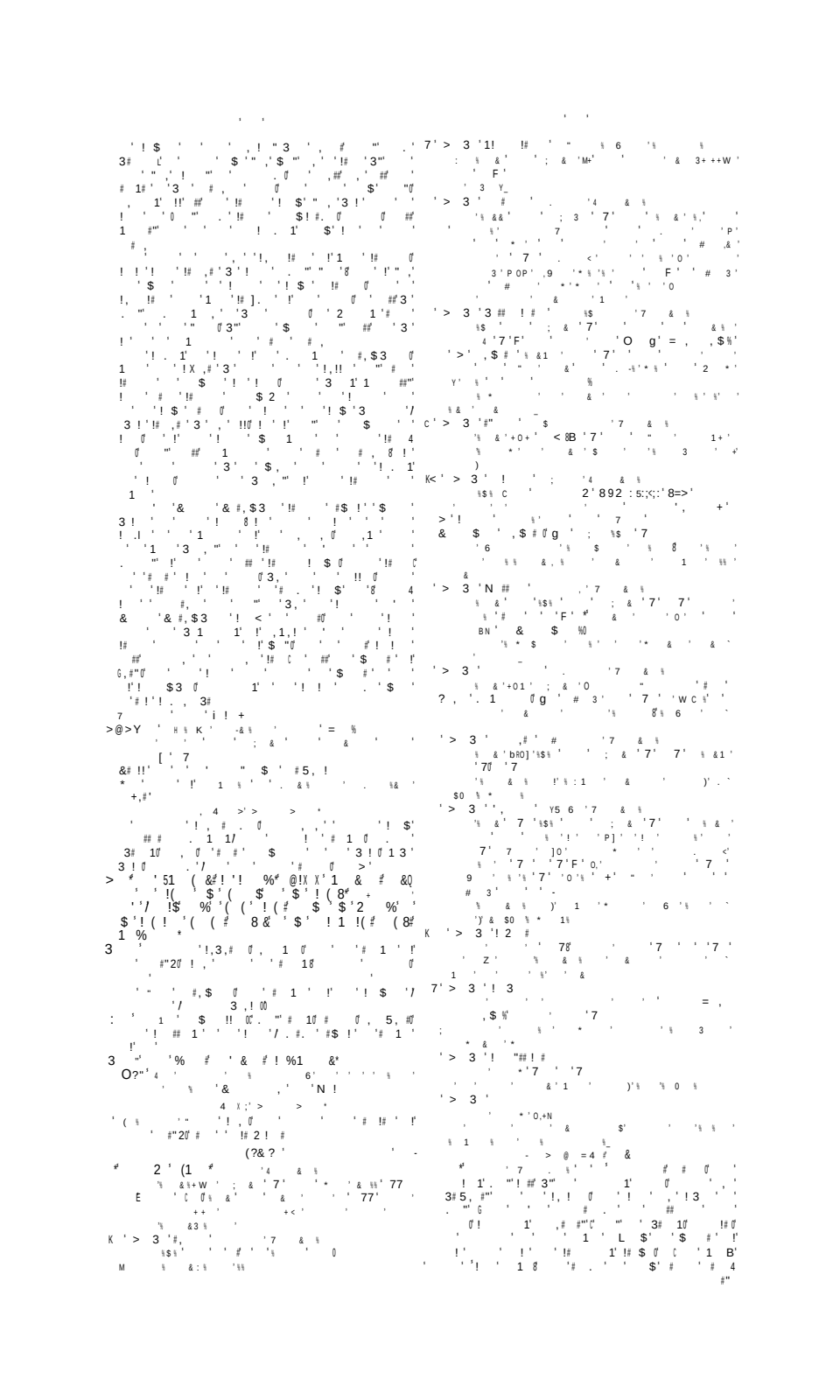

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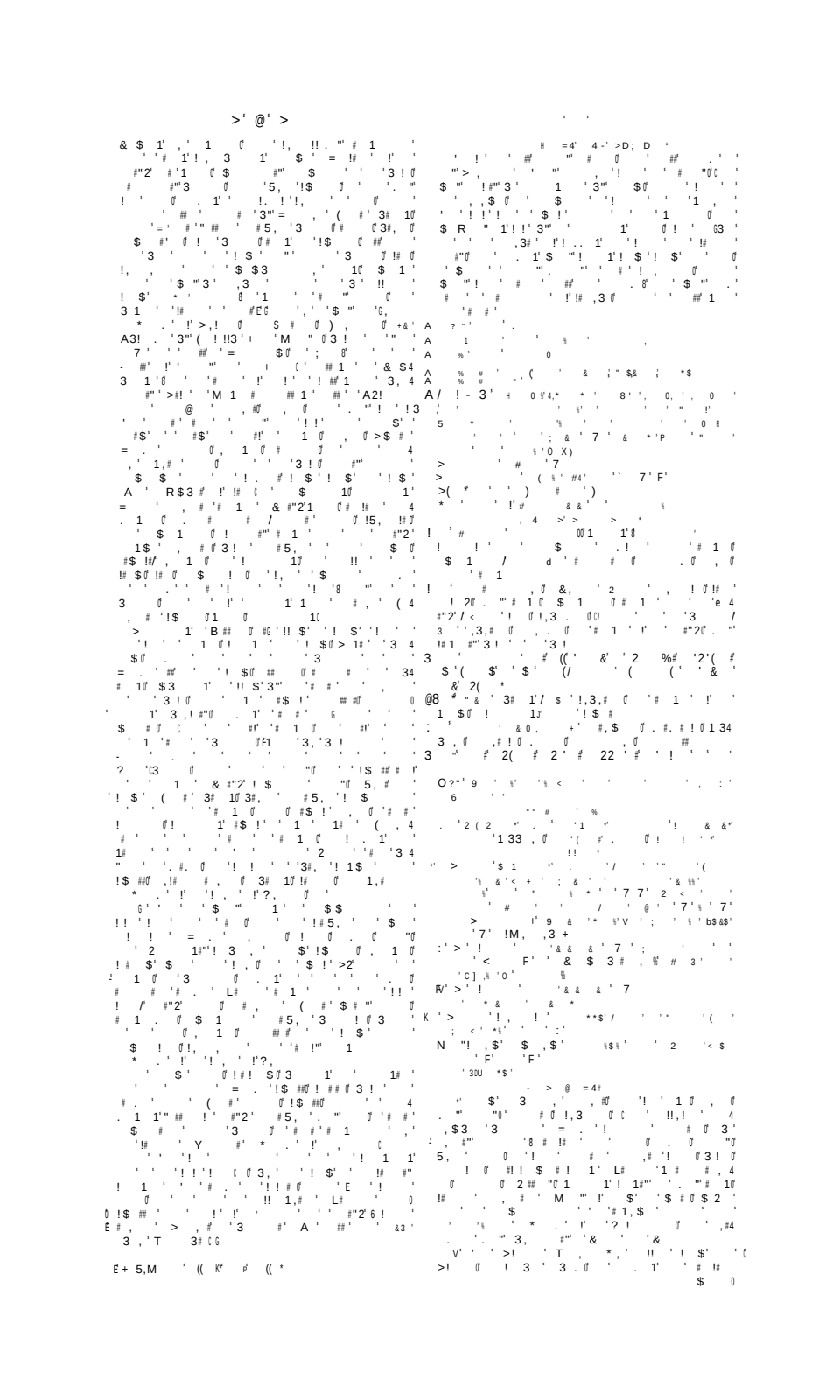

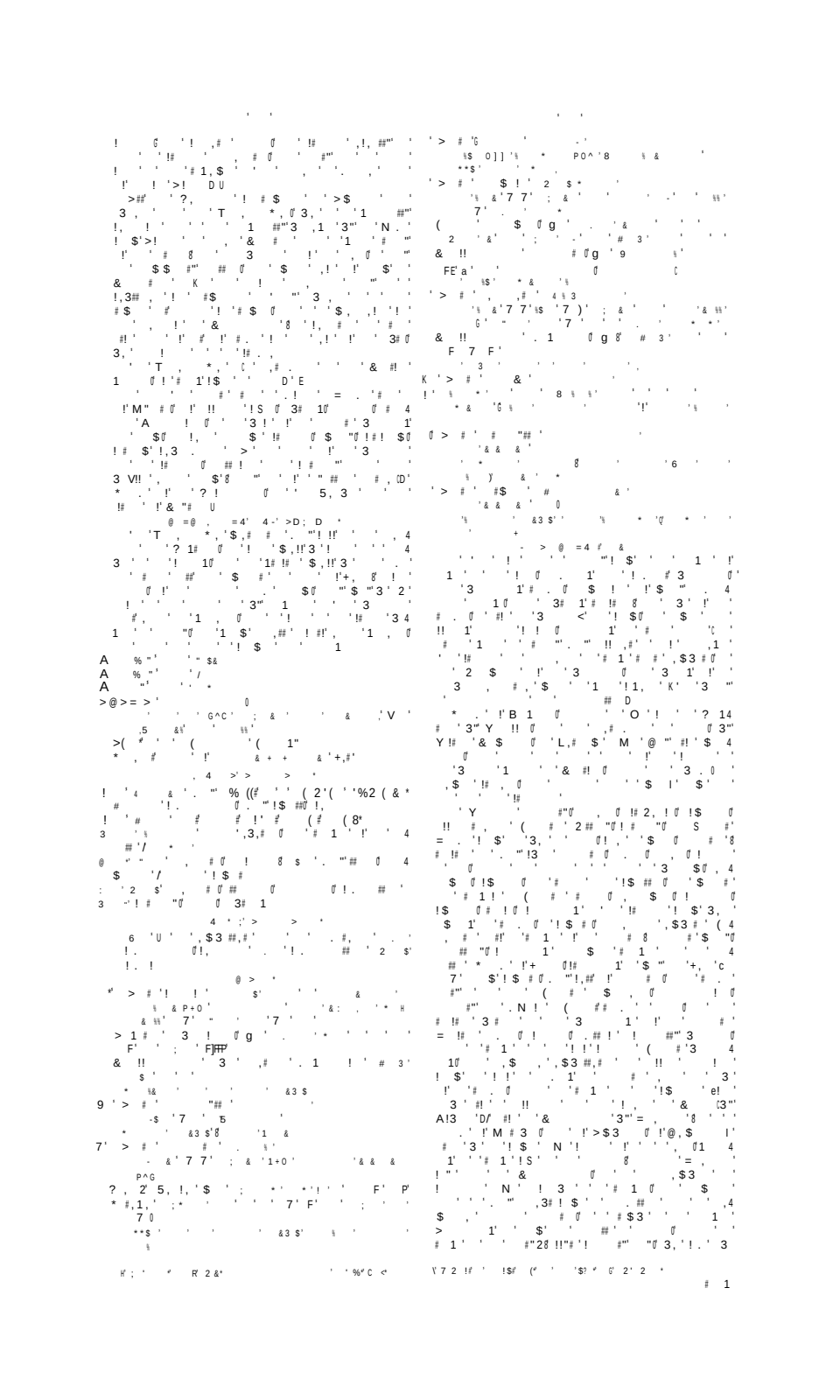

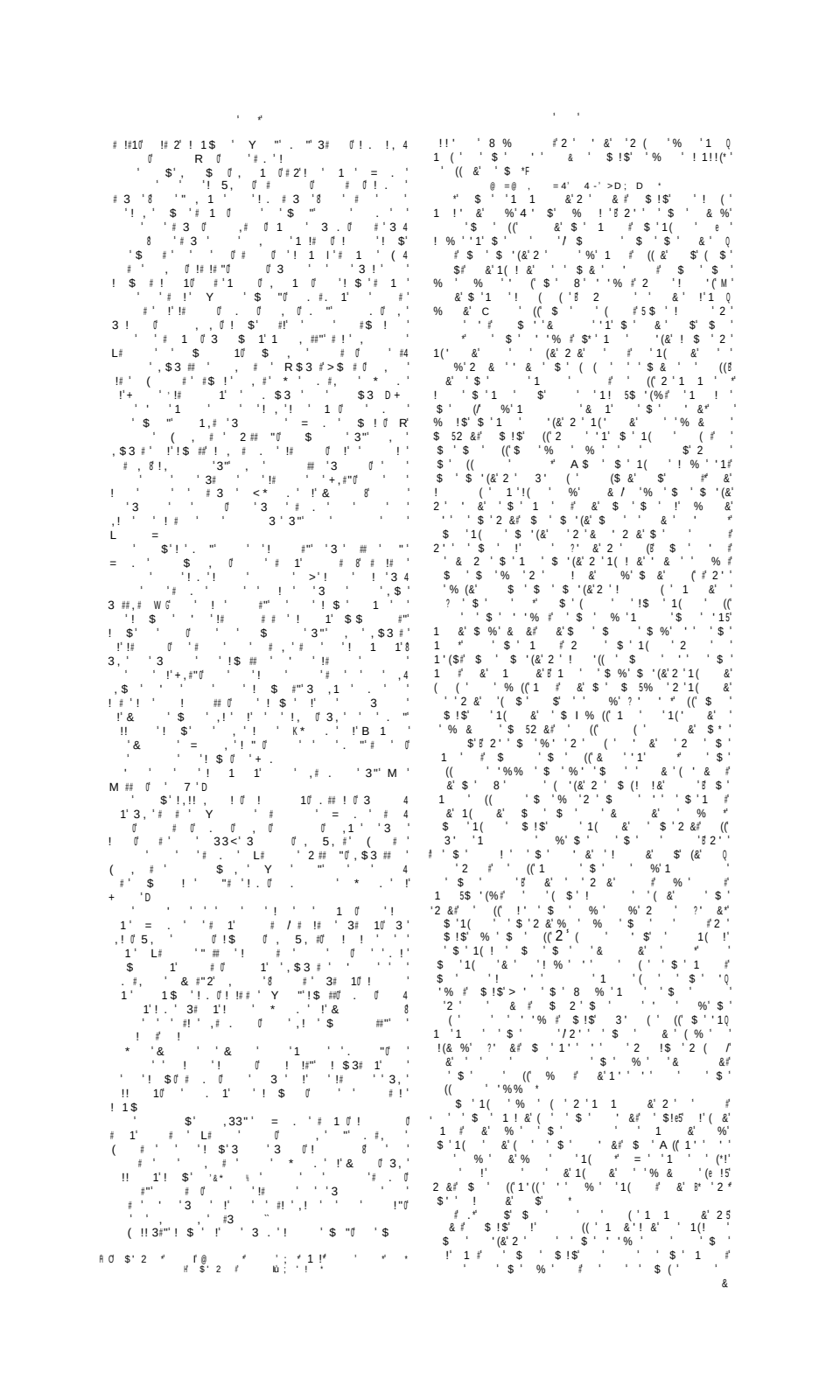

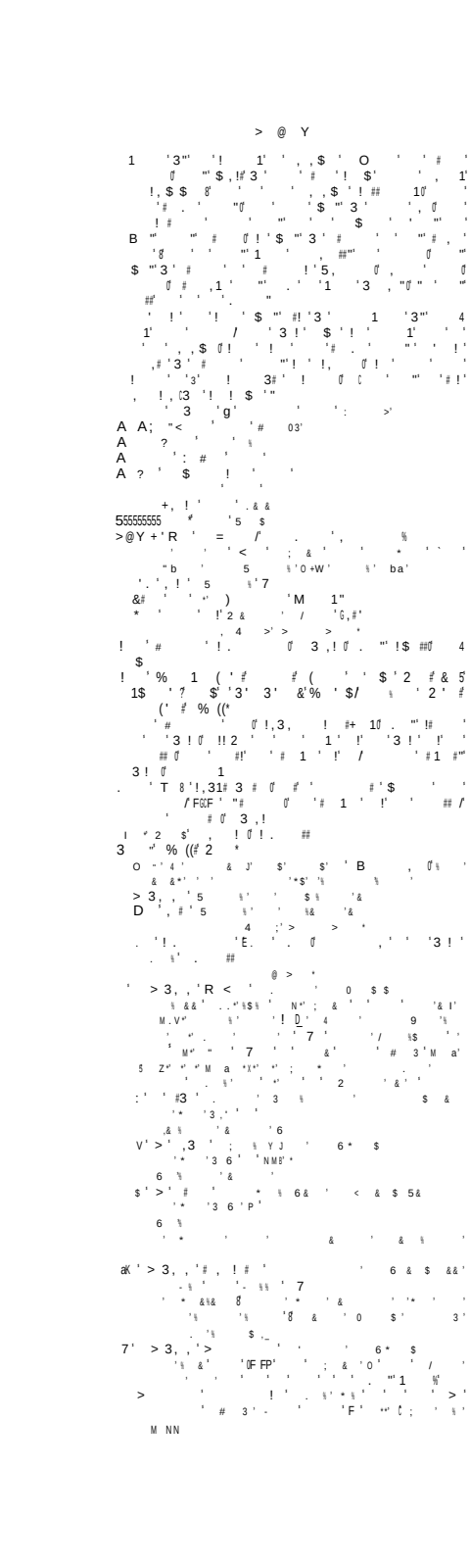

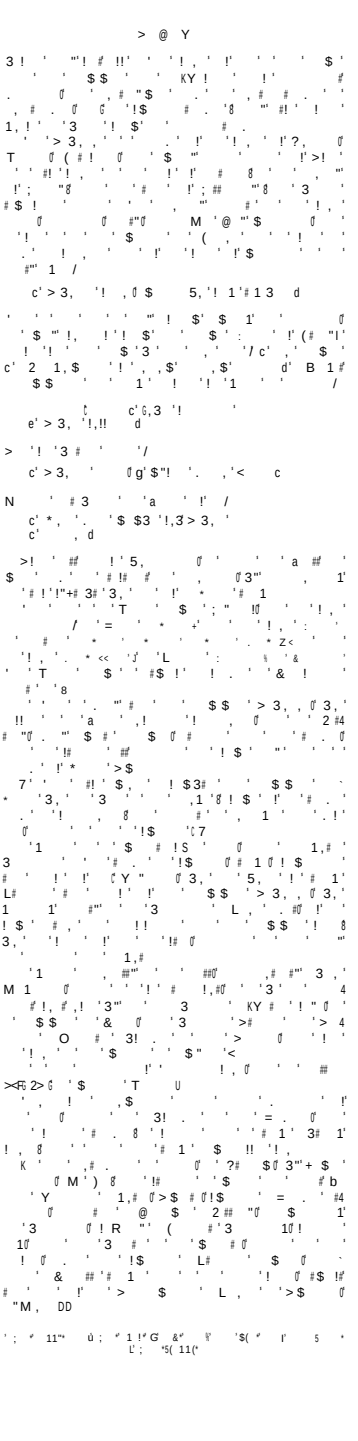

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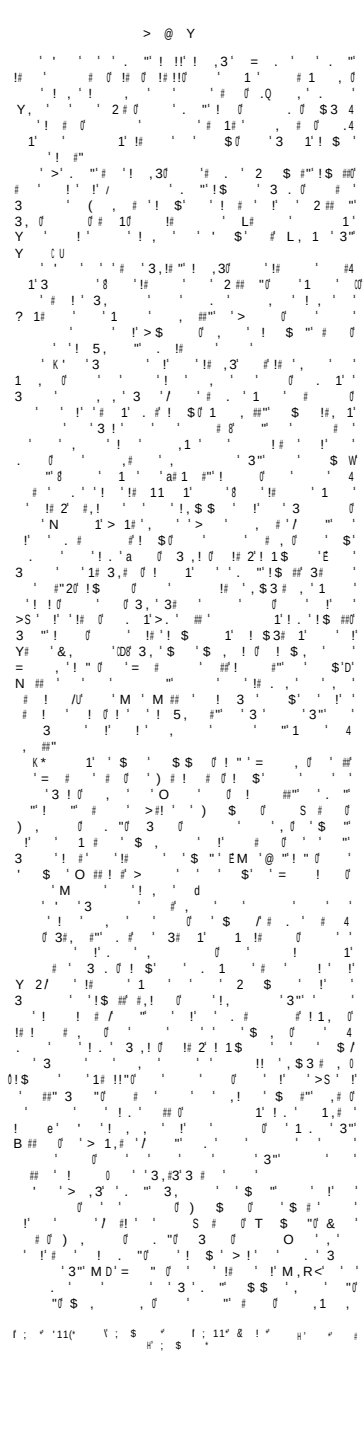

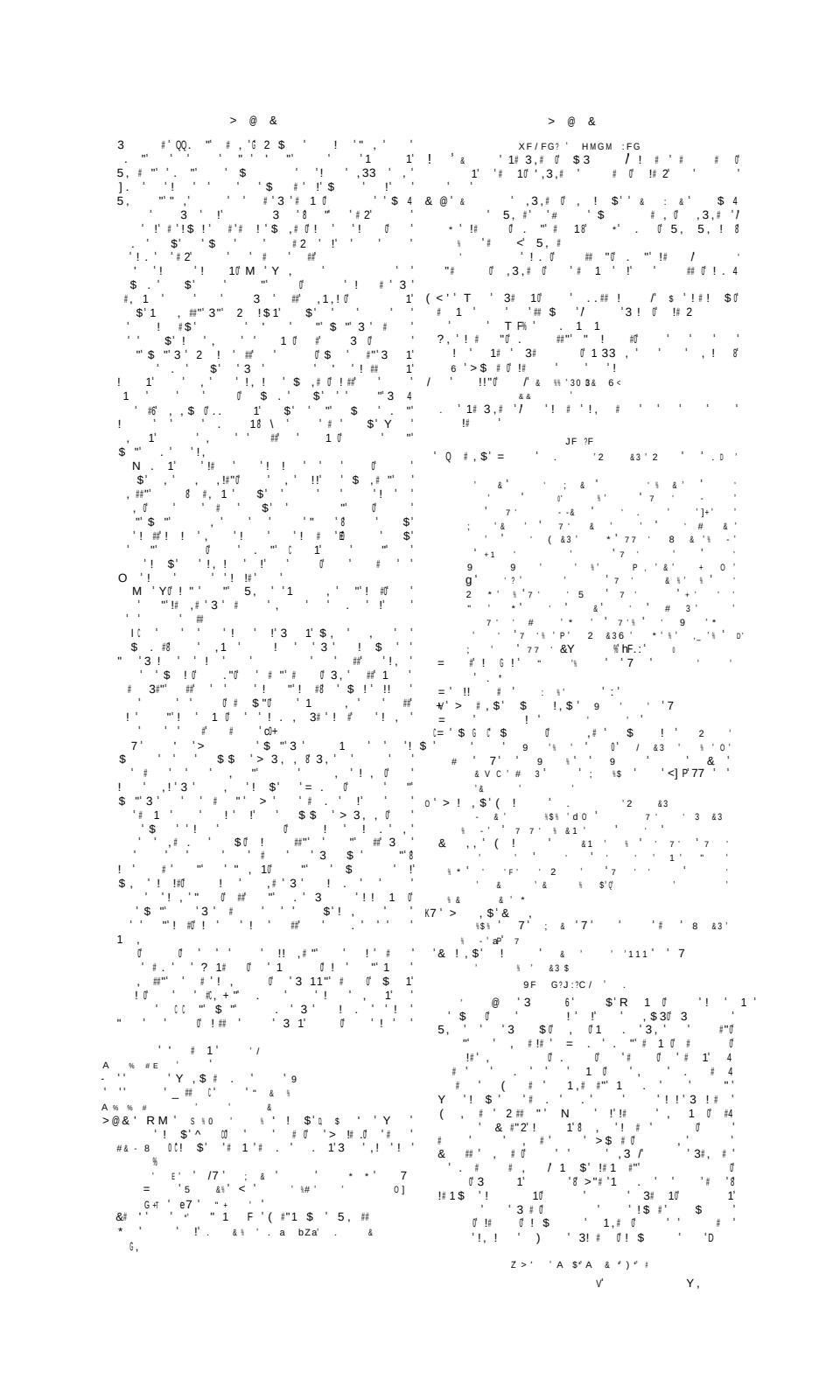

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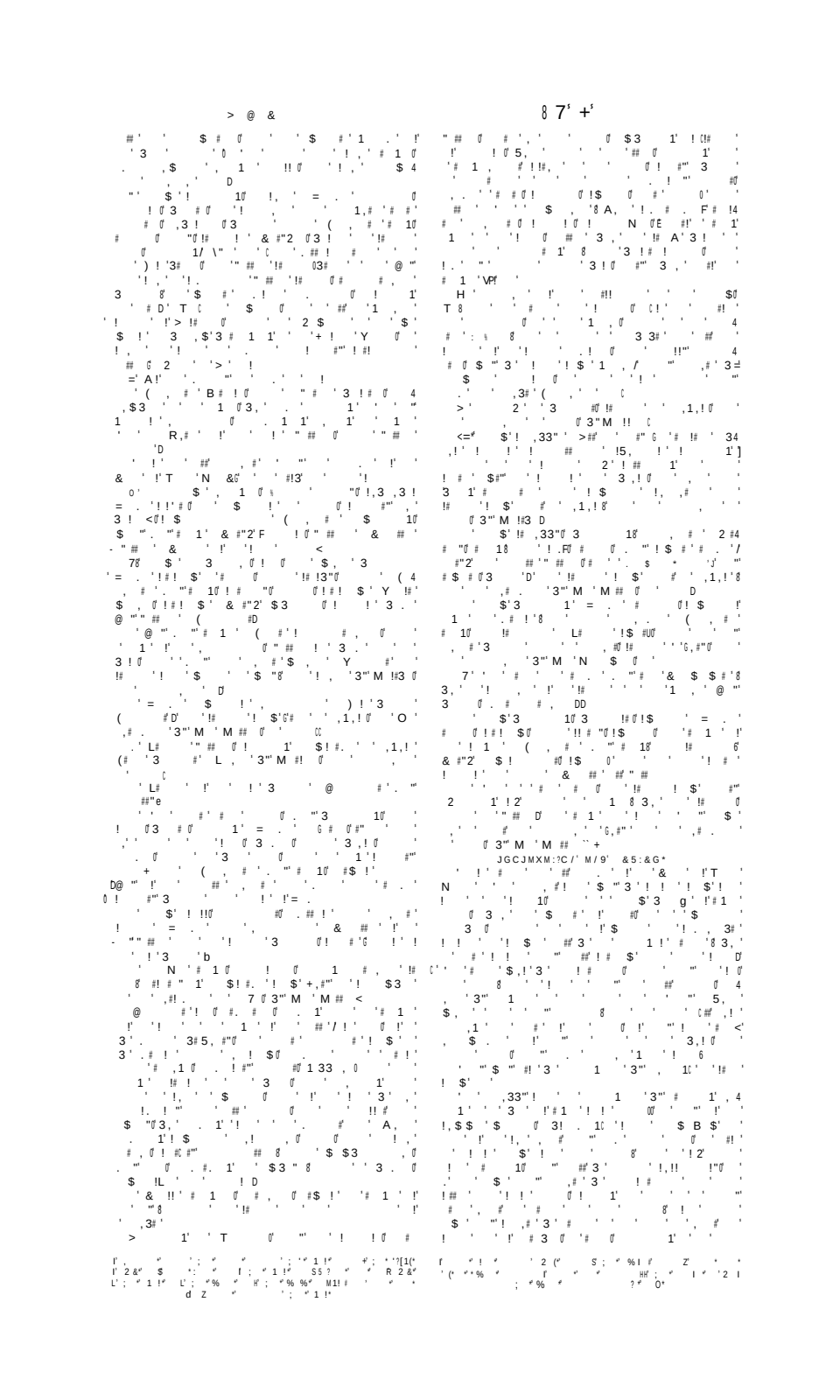

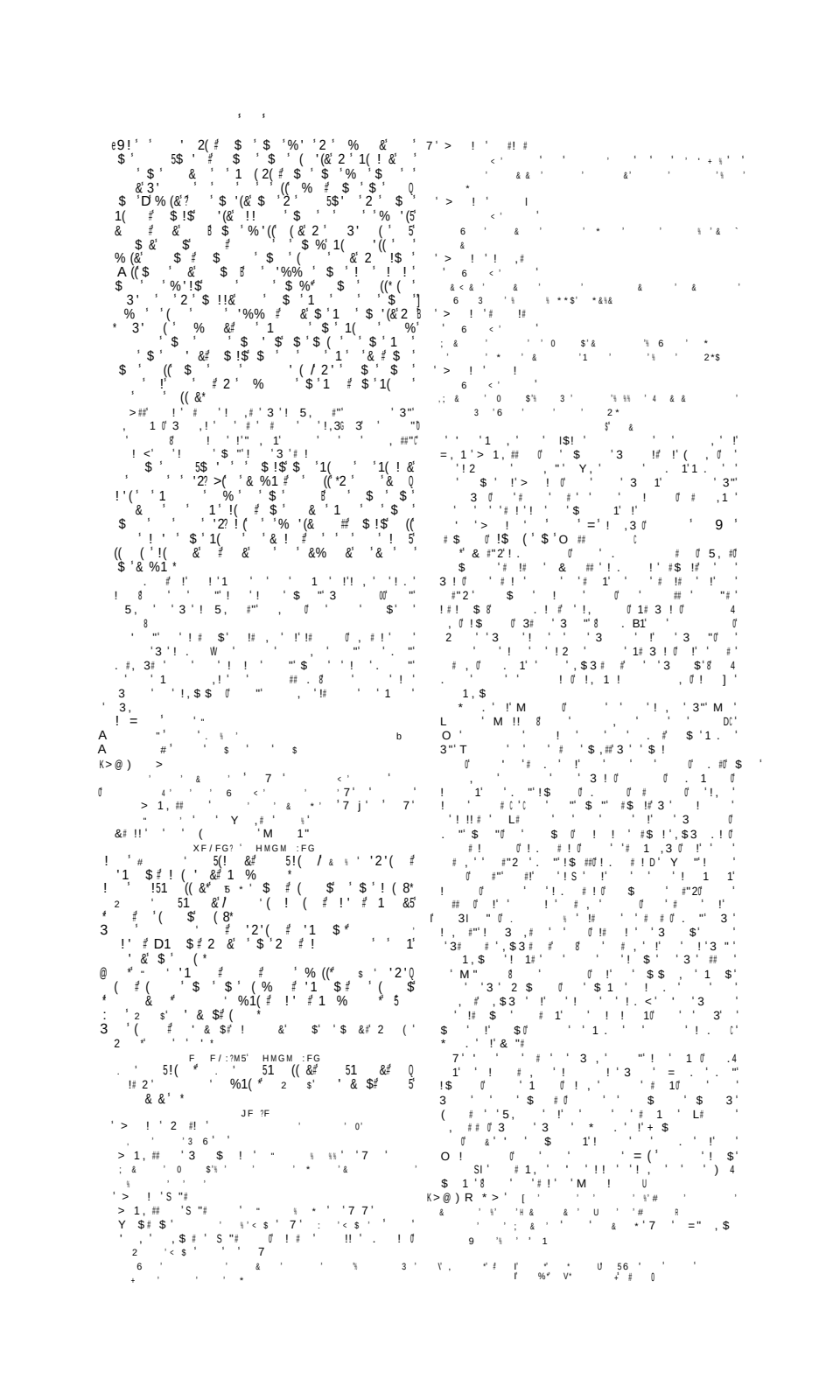

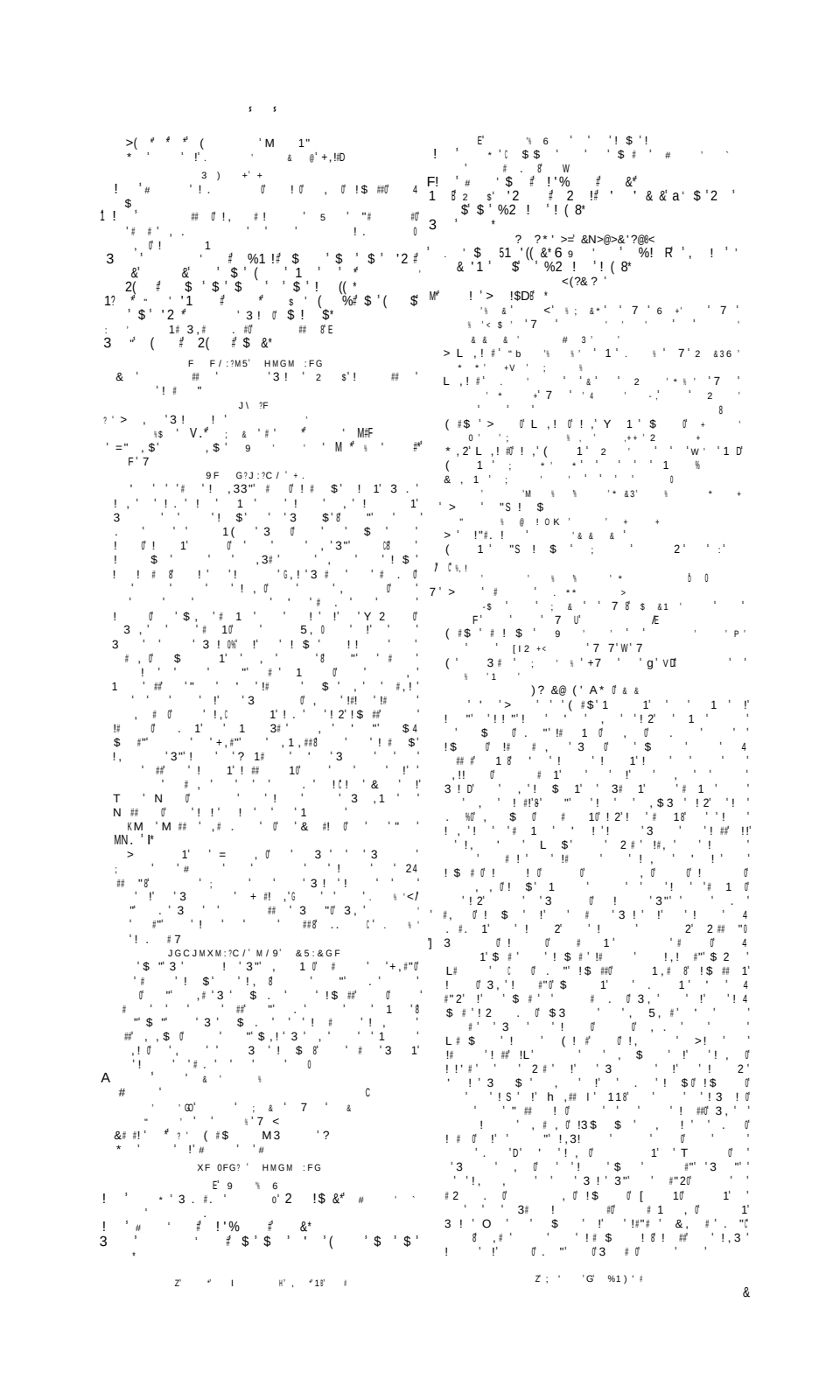

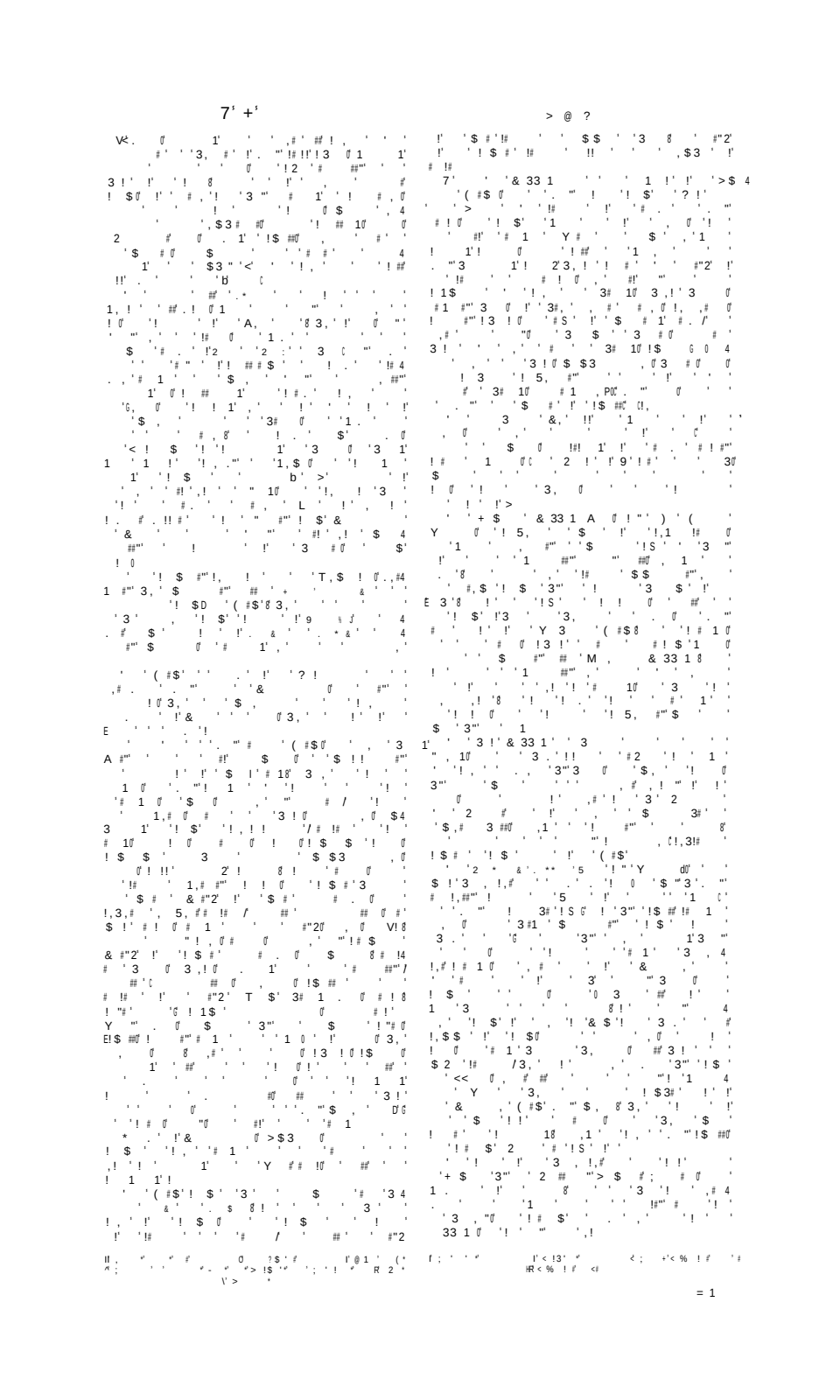

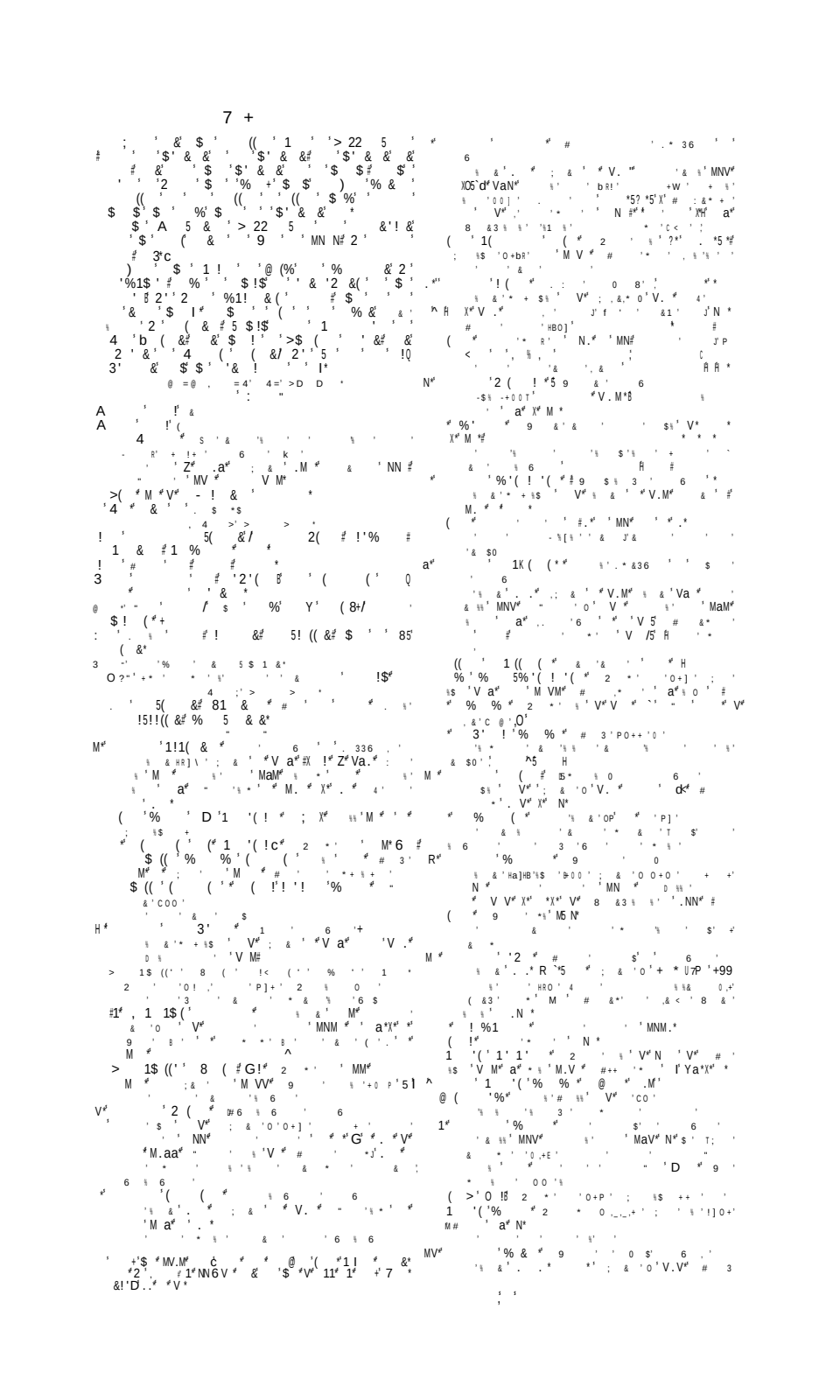

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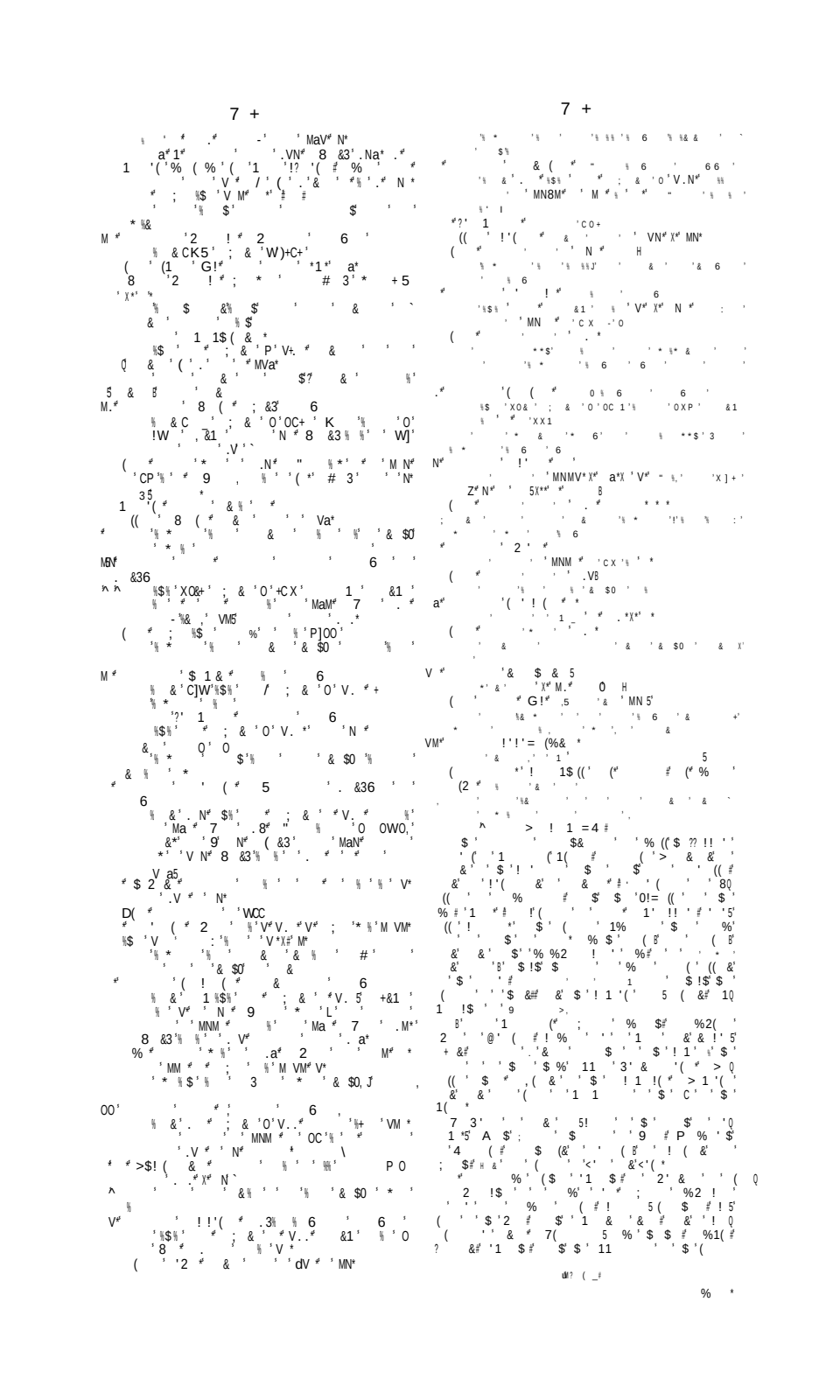

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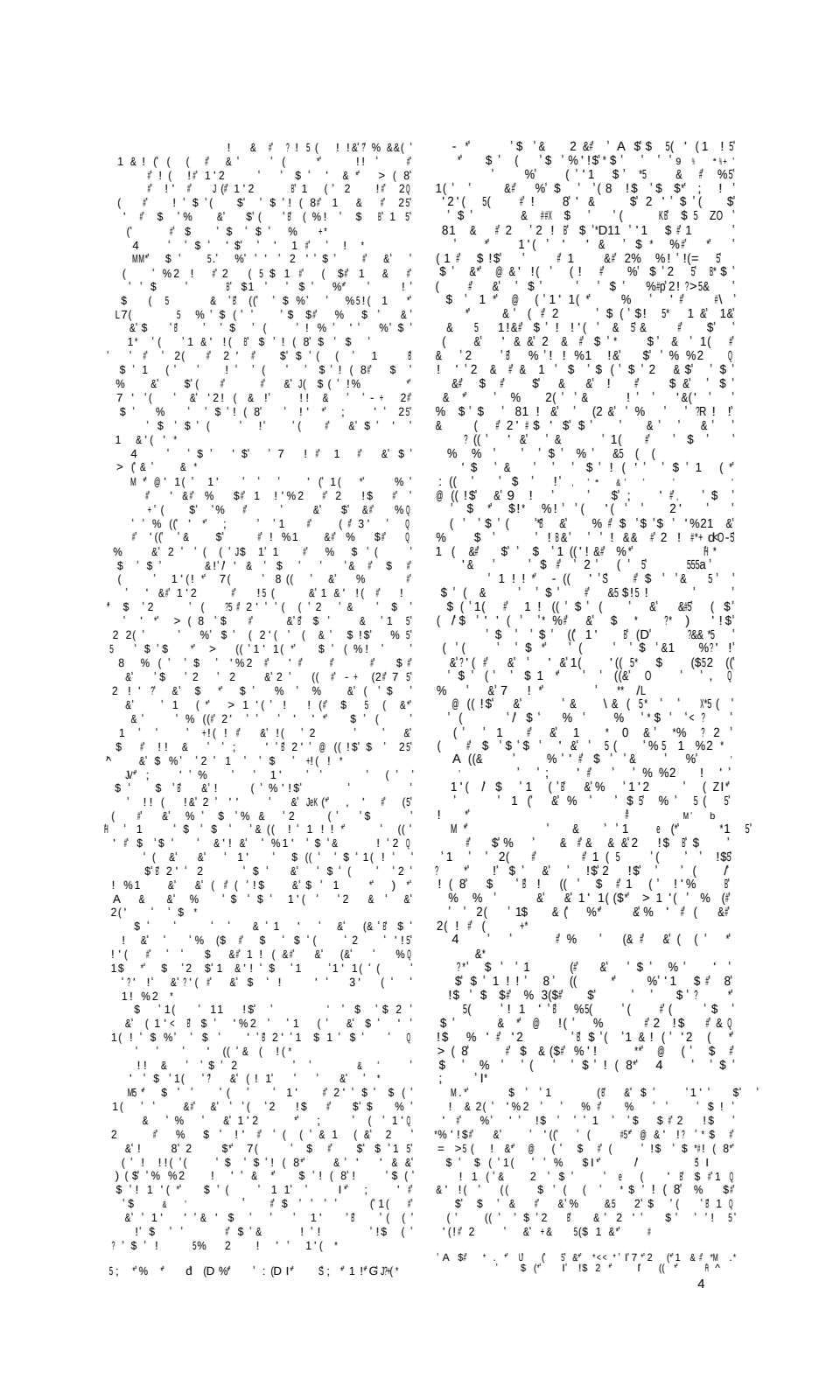
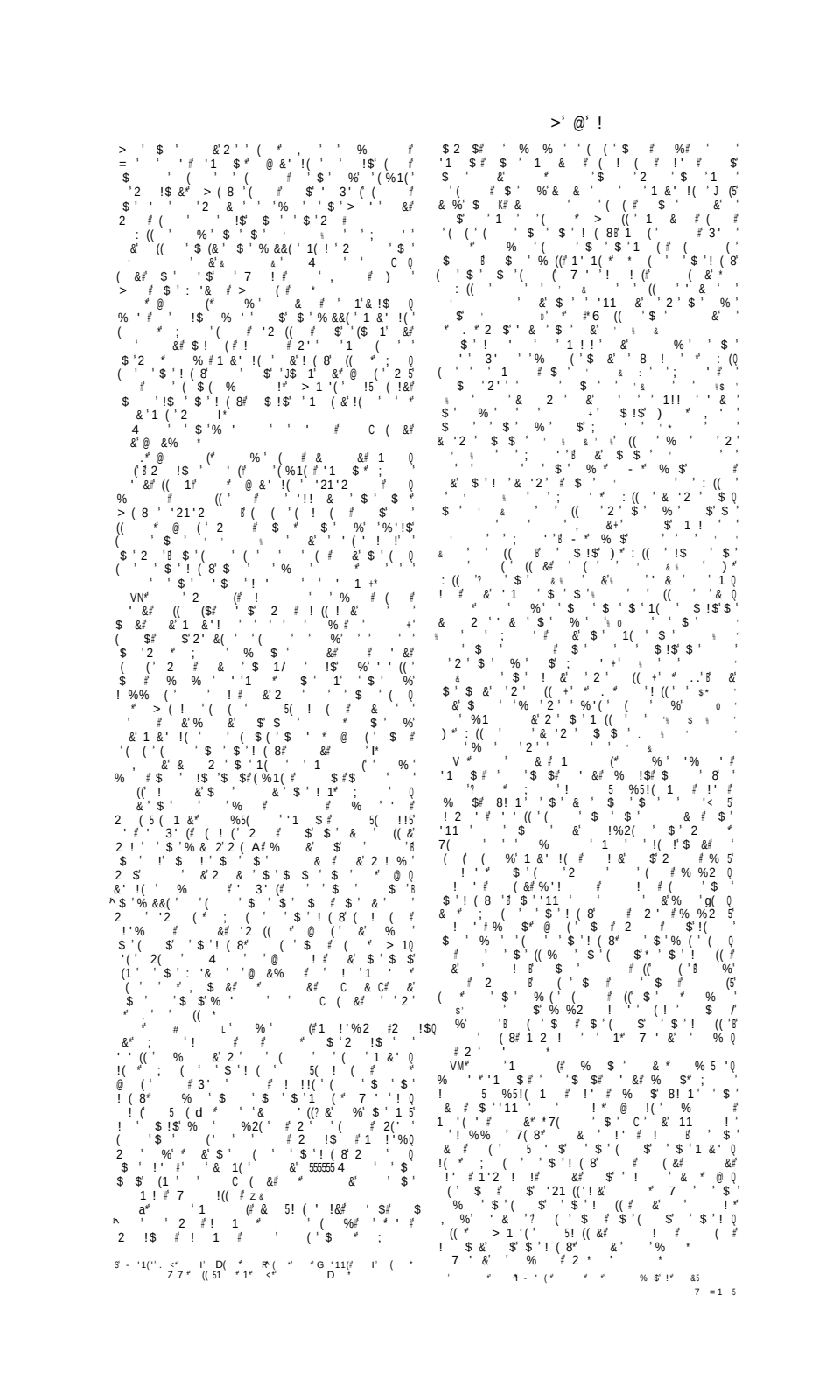
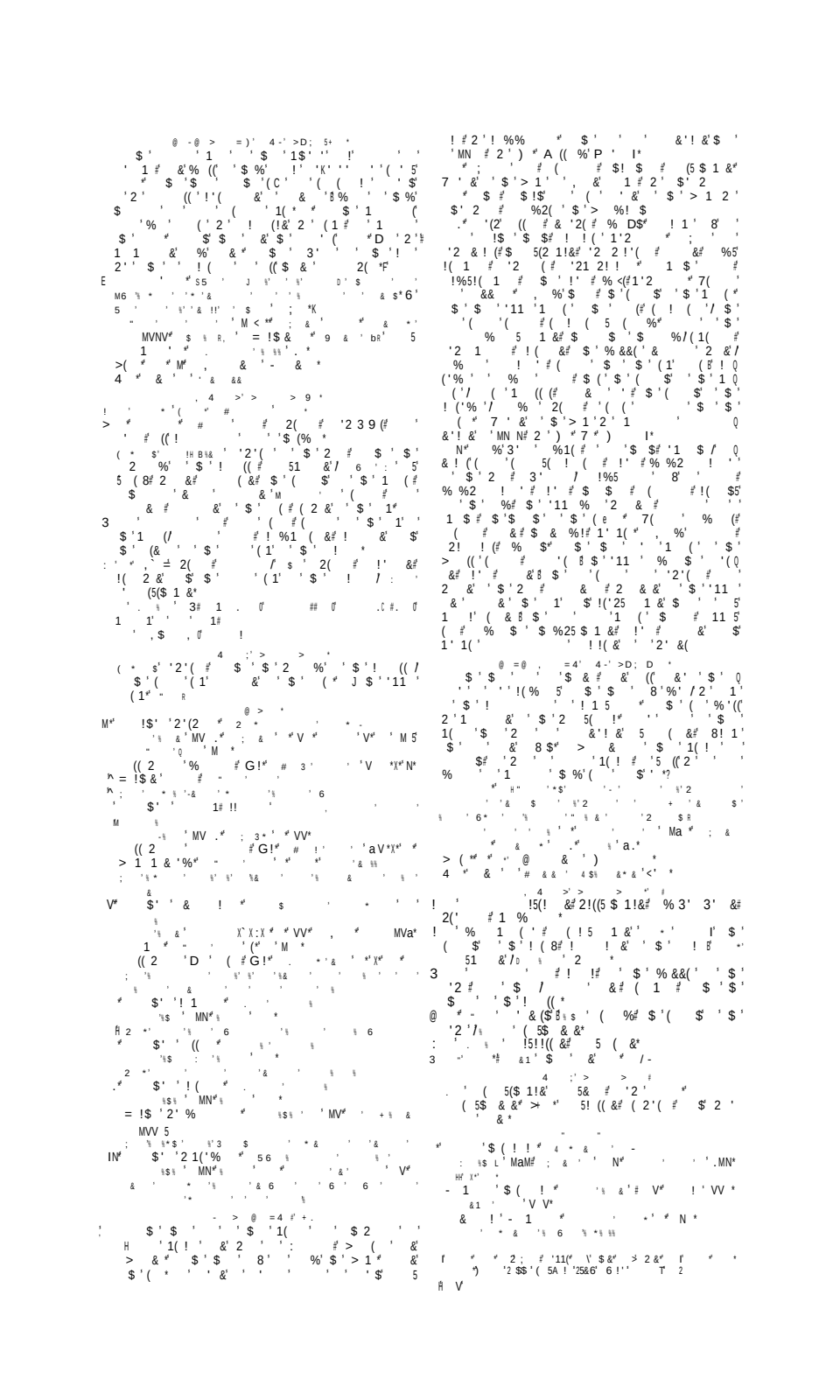
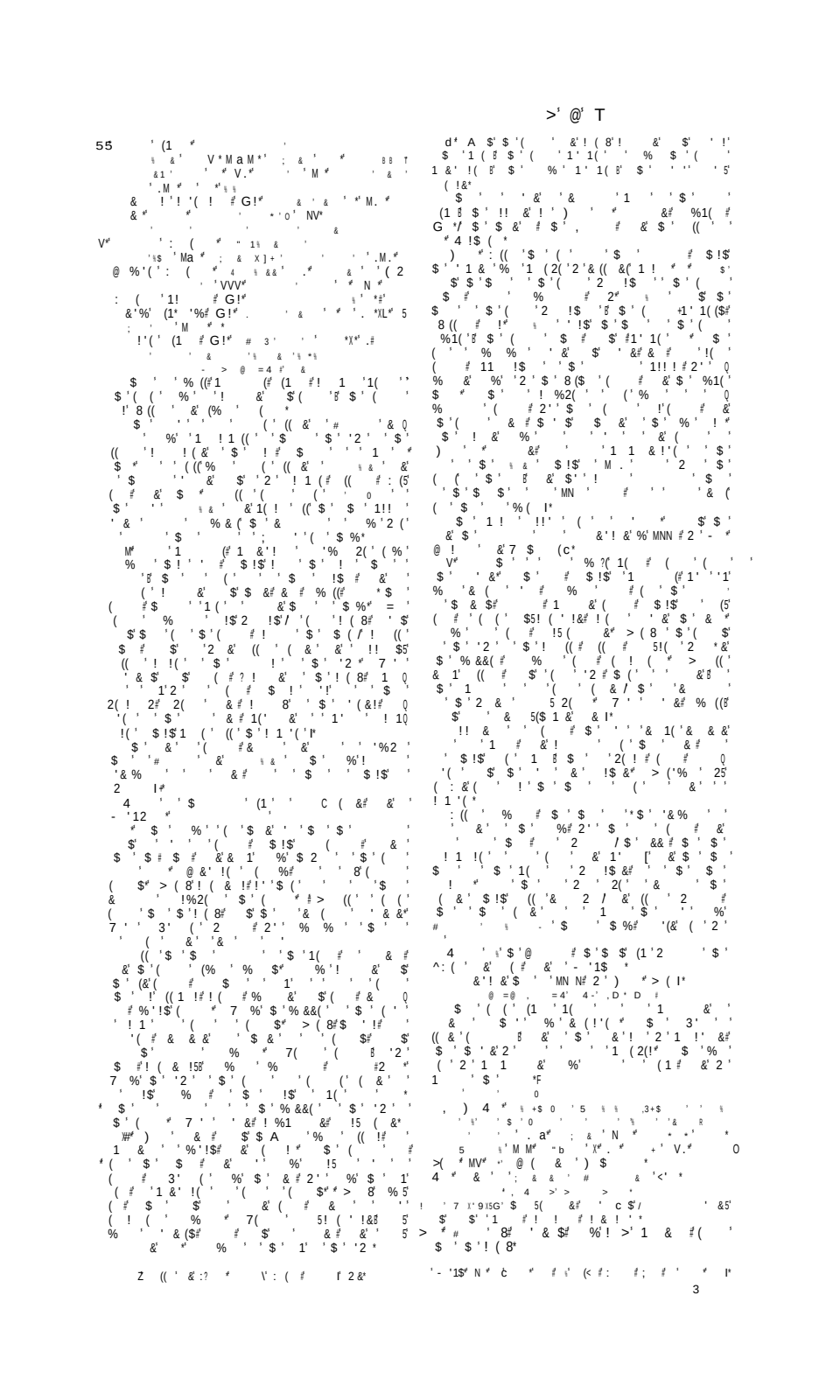








the glume of the corolla; the valve of which is ſubulate, convoluted, longer, awned at the tip, ſhining, villoſe at the baſe. Awn three-parted at the baſe: briſtles capillary, cartilaginous-ferrate. Anthers dark purple. Stigmas villoſe, of the ſame colour. Seed very minute, acuminate [a].

Linneus ſays, it has the habit of *Feſtuca ovina*, but that it is rather larger; that the culms branch at bottom; that the leaves from a broader baſe narrow gradually, are flat, channelled and ſubulate; that the panicle is oblong, with the ſingle glume of the corolla filiform, longitudinally convoluted, and terminated by a triple awn; and that it is one of the four plants in the iſle of Aſcenſion, which conſtitute its entire Flora. The other three are, *Sherardia fruticoſa*, *Euphorbia origanoides*, and *Portulaca* [b]. It will be curious to compare this with the ſtate of the iſland in future times.

It is alſo native of Jamaica, in dry ſands. Browne calls it the bearded Graſs.

2. Culm half a foot high, riſing, jointed, ſubdivided. Leaves linear, ſtiff, even. Panicle with ſimple, alternate ſpreading branches; the florets moſtly pointing one way, alternate, approximated, preſſed cloſe (8—10). Rachis compreſſed, ſomewhat flexuoſe. Valves of the calyx awnleſs: outer keeled, lanceolate, acute; inner linear, ſmaller. Glume of the corolla two-valved: outer valve lanceolate, awned outwardly at the baſe, awn three-parted, twice as long as the valve; lower valve keeled, three-awned at the tip, awns ſhort, the middle one longeſt. Anthers red. Stigmas feathered, white. Seed linear, acuminate. Native of Jamaica with the foregoing [c]. This being leſs than that, Dr. Browne calls it the ſmaller bearded Graſs.

3. The woolly awns give this ſpecies the air of *Stipa pennata*, but the panicle is more compound, all the parts ſmaller, and the culm villoſe: the awn alſo is naked towards the baſe, where it has two briſtles or little awns, which are oppoſite, ſhort, capillary, and ſpreading [d]. By the reference to Tournefort's corollary we may preſume this to be a native of the eaſt; and Linneus ſays, that it was found in America by Schreber.

4. Culms four feet high, narrow, even, ſulli. Leaves rolled inwards, narrow, even, ſtriated. Panicle oblong, upright, with capillary pedicels. Flowers oblong, hoary with white hairs intermixed. The calyx has about five flowers, is two-valved, and attenuated. The outer valve of the corolla is awned at the tip; the awn is the length of the flower, naked, and ſomewhat curved backwards; at the baſe of this on each ſide is a minute awn, ſcarcely viſible without attentive obſervation.

Found in the Eaſt-Indies, by Koenig [e].

5. This is a very lofty Graſs, branching and very ſmooth. Panicles terminating, about eight inches long, not contracted as in the firſt ſpecies. Calyxes very ſmooth, unequal, blueiſh. Corolla ſmooth, with equal, ſhort awns, almoſt naked. Found on the iſland of Teneriffe by Maſſon [f].

6. This is a creeping, ſtoloniferous, and very ſmooth Graſs. Culms very tough, leafy, and ſhort. Leaves convoluted. Panicle terminating, large: peduncles and pedicels binate: rachis angular. Flowers filiform, long. Calyx one-flowered; valves unequal, the longer ſubulate. Corolla longer than the calyx, convoluted, terminated by three, equal, ſtraight, ſpreading awns, ſcabrous backwards, twice the length of the flower. Obſerved in Malabar by Koenig.—It varies with downy ſheaths to the root-leaves [g].

ARISTOLOCHIA. (Αριστολοχια *Dioſc.* ἀριστος and λοχια or λοχεια; *becauſe it was ſuppoſed to be of ſovereign uſe in diſorders incident to child-birth.*)

*Lin. gen.* 1022. *Reich.* 1111. *Schreb.* 1383. *Tournef.* 71. *Juſſ.* 73. *Gærtn.* 14.

Claſſ. 20. 5. Gynandria hexandria.

Nat. order of *Sarmentaceæ*. *Ariſtolochiæ* Juſſ.

GENERIC CHARACTER.

CAL. none.

COR. monopetalous, tubulous, irregular; *baſe* ſwelling, ſubglobular, toruloſe: *tube* oblong hexagon-cylindric: *limb* dilated, extended below into a long tongue.

STAM. *Filaments* none: *anthers* ſix, faſtened at bottom to the ſtigmas, four-celled.

PIST. *Germ* oblong, inferior, angular: *ſtyle* ſcarcely any: *ſtigma* ſubglobular, ſix-parted, concave.

PER. *Capſule* large, ſix-angled, ſix-celled.

SEEDS ſeveral, depreſſed, incumbent.

OBS. *Fruit varies in figure; being in ſome ſpecies roundiſh, in others long.*

ESSENTIAL CHARACTER.

*Stigmas* ſix. *Cal.* none. *Cor.* monopetalous, tongue-ſhaped, entire. *Capſ.* ſix-celled, inferior.

SPECIES.

[1. Ariſtolochia bilobata. *Two-lobed Birthwort.*
*Lin. ſpec.* 1361. *Reich.* 4. 56. *Jacqu. miſc. auſtr.* 2. *p.* 346. *Swartz. obſ.* 340.
A. longa ſcandens, foliis ferri equini effigie. *Plum. ſpec.* 5. *amer.* 91. *t.* 106. *Raii ſuppl.* 395. *n.* 11.
*Leaves two-lobed, ſtem twining.*

2. Ariſtolochia trilobata. *Three-lobed Birthwort.*
*Lin. ſpec.* 1361. *ſyſt.* 823. *Reich.* 4. 56. *Jacqu. obſ.* 8. *t.* 3. *Plum. ſpec.* 5. *Brown. jam.* 329. 3. *Swartz. obſ.* 341.
*Leaves three-lobed, ſtem twining, flowers very large, bagged at the baſe, tongue linear very long.*

3. Ariſtolochia pentandra. *Five-ſtamened Birthwort.*
*Lin. ſpec.* 1361. *Reich.* 4. 56. *Jacqu. amer.* 232. *t.* 147. *pict. p.* 115. *t.* 224.
*Leaves cordate, baſtate-ſubtrilobate, ſtem twining, bractæ cordate, embracing.*

4. Ariſtolochia peltata. *Peltated Birthwort.*
*Lin. ſpec.* 1361. *ſyſt.* 824. *Reich.* 4. 57. *Jacqu. obſ.* 1. 4. *t.* 4. *amer. pict. p.* 114. *t.* 222. *Plum. ſpec.* 5. *ic.* 32. *f.* 2. *Swartz. obſ.* 341.
*Leaves kidney-ſhaped, ſubpeltate, ſtem twining.*]

5. Ariſtolochia maxima. *Greateſt Birthwort.*
*Lin. ſpec.* 1361. *ſyſt.* 824. *Reich.* 4. 57. *Jacqu. amer.* 223. *t.* 146. *pict. p.* 114. *t.* 223.
*Leaves oblong, acuminate, ſtem twining, peduncles many-flowered.*

[6. Ariſtolochia bilabiata. *Two-lipped Birthwort.*
*Lin. ſpec.* 1361. *Reich.* 4. 57. *Plum. ſpec.* 5. *ic.* 32. *f.* 1. *Swartz. obſ.* 342.
*Leaves cordate-tongue-ſhaped obtuſe, ſtem twining, corollas two-lipped.*]

7. Ariſtolochia erecta. *Upright Birthwort.*
*Lin. ſpec.* 1362. *Reich.* 4. 57. A. repens. *Mill. dict.* n. 12.
*Leaves lanceolate, ſeſſile, ſubhirſute: ſtem erect, peduncles ſolitary, one-flowered, flowers very long.*

8. Ariſtolochia arboreſcens. *Tree Birthwort.*
*Lin. ſpec.* 1362. *Reich.* 4. 57. *Pluk. alm.* 50. *t.* 78. *f.* 1?
*Leaves cordate-lanceolate, ſtem erect, ſhrubby.*

[9. Ariſtolochia caudata. *Tailed Birthwort.*
*Lin. ſpec.* 1362. *ſyſt.* 824. *Reich.* 4. 58. *Jacq. amer.* 233. *t.* 145. *pict. p.* 114. *t.* 221.
*Leaves cordate, obtuſe, emarginate at the tip, lobes incumbent, lip tailed.*]

10. Ariſtolochia odoratiſſima. *Sweet-ſcented Birthwort.*
*Lin. ſpec.* 1362. *Reich.* 4. 58. *Brown. jam.* 329. 1. *Sloan. jam.* 1. *p.* 162. *t.* 104. *f.* 1. *Raii ſuppl.* 394? *Plum. ſpec.* 5. *ic.* 34?
A. indica. *Mill. dict.* n. 8.
*Leaves cordate; ſtem twining, ſhrubby, peduncles ſolitary, lip of the corolla very large.*

[11. Ariſtolochia Sipho. *Broad-leaved Birthwort.*
*L'Heritier. ſtirp. nov.* 1. *p.* 13. *t.* 7. *Ait. hort. kew.* 3. 311.
*Leaves cordate, petioled; flowers ſolitary, border triſid, equal, bractæ ovate; ſtem twining, ſhrubby.*

12. Ariſtolochia anguicida. *Snake-killing Birthwort.*
*Lin. ſpec.* 1362. *ſyſt.* 864. *Reich.* 4. 58. *Jacqu. amer.* 232. *t.* 144. *pict. p.* 114. *t.* 220. *Mor. hiſt.* 3. *f.* 12. *t.* 17. *f.* 7.
*Leaves cordate, acuminate, ſtem twining, ſhrubby, peduncles ſolitary, ſtipules cordate.*

[a] Swartz. [b] Oſbeck in Linn. ſpec. [c] Swartz. [d] Linn. ſpec. [e] Linn. mant. [f] Linn. ſuppl. [g] Ibid.

13. Ariſtolochia maurorum. *Mooriſh Birthwort.*
*Lin. ſpec.* 1363. *Reich.* 4. 59. *Gron. orient. n.* 280. *Tourn. cor.* 161. *Baub. pin.* 307. *n.* 9. *Mor. hiſt.* 3. *ſ.* 12. *t.* 17. *f.* 11. *Cluſ. hiſt.* 2. *p.* 71. *Rauw. itin.* 121. *t.* 23. *Cluſ. hiſt.* 2. 72. *Raii hiſt.* 763.
*Leaves haſtate, quite entire; ſtem weak, ſimple; flowers ſolitary, recurved.*

14. Ariſtolochia indica. *Indian Birthwort.*
*Lin. ſpec.* 1362. *Reich.* 4. 59. *zeyl.* 323. *Lour. cochinch.* 528. *Gertn. fruct.* 1. 45. *Burm. ind.* 191. *zeyl.* 32.
Carelu-vegon. *Rheed. mal.* 8. *p.* 48. *t.* 25. *Raii ſuppl.* 394. *n.* 10.
*Leaves cordate, rather acute, ſtem twining, peduncles many-flowered.*

15. Ariſtolochia bœtica. *Spaniſh Birthwort.*
*Lin. ſpec.* 1363. *Reich.* 4. 59. *Baub. pin.* 307. *Mor. hiſt.* 3. *ſ.* 12. *t.* 17. *f.* 6. *Cluſ. hiſt.* 2. *p.* 71. *Ger.* 697. *f.* 3. *emac.* 847. 3. *Park. theat.* 292. *n.* 6.
*Leaves cordate, rather acute, ſtem twining, peduncles about three, longer than the petiole.*]

16. Ariſtolochia ſempervirens. *Evergreen Birthwort.*
*Lin. ſpec.* 1363. *Reich.* 4. 59. *hort. cliff.* 432. *Sauv. monſp.* 111. *Sabb. hort.* 2. *t.* 82.
Piſtolochia cretica. *Baub. pin.* 307. *Mor. hiſt.* 3. *t.* 12. *t.* 17. *f.* 16.
Piſt. altera. *Cluſ. hiſt.* 2. *p.* 260.
*Leaves cordate-oblong, acuminate, waved; ſtem weak, flowers ſolitary.*

17. Ariſtolochia Serpentaria. *Virginia Birthwort* or *Snake-root.*
*Lin. ſpec.* 1363. *ſyſt.* 824. *Reich.* 4. 60. *mat. med.* 196. *Woodv.* 291. *t.* 106. *Gron. virg.* 140. *Pluk. alm.* 50. *t.* 148. *f.* 5. *Cateſb. car.* 1. 29. *Raii ſuppl.* 394. *n.* 6. *Mor. hiſt. t.* 17. *f.* 14. *Ger. emac.* 848. *f.* 6. *Park. theat.* 420.
*Leaves cordate-oblong, flat; ſtems weak, flexuoſe, round: flowers ſolitary.*

18. Ariſtolochia Piſtolochia.
*Lin. ſpec.* 1364. *ſyſt.* 824. *Reich.* 4. 60. *hort. cliff.* 433. *Gouan. fl. monſp.* 476. *Sauv. monſp.* 111. *Baub. pin.* 307. *n.* 7. *Haill. helv. n.* 1029. *p.* 444. *Villars dauph.* 274. *Raii hiſt.* 763. *n.* 7.
Piſtolochia. *Cluſ. hiſt.* 2. *p.* 72. *Dod. pempt.* 525. *Ger. emac.* 847. 5.—vulgatior. *Park. theat.* 292. *f.* 7.
*Leaves cordate, crenulate, netted underneath, petioled; flowers ſolitary.*

19. Ariſtolochia rotunda. *Round-rooted Birthwort.*
*Lin. ſpec.* 1364. *Reich.* 4. 60. *mat. med.* 196. *hort. cliff.* 432. *Gouan. monſp.* 476. *Sauv. monſp.* 111. *Scop. carn. n.* 1135. *Villars dauph.* 275. *Sabb. hort.* 2. *t.* 80. *Blackw.* 256. *Ger. herb.* 696. 2. *emac.* 846. 2. *Park. theat.* 291. 1. *Baub. pin.* 307. *n.* 1. *Cluſ. hiſt.* 2. *p.* 70. *Baub. hiſt.* 3. 559. *Raii hiſt.* 761.
*Leaves cordate, ſubſeſſile, obtuſe; ſtem weak; flowers ſolitary.*

20. Ariſtolochia longa. *Long-rooted Birthwort.*
*Lin. ſpec.* 1364. *Reich.* 4. 61. *mat. med.* 197. *Gouan. monſp.* 477. *Sauv. monſp.* 111. *Scop. carn. n.* 1136. *Sabb. hort.* 1. *t.* 81. *Mill. ſig. t.* 51. *f.* 2. *Baub. pin.* 307. *hiſt.* 3. 560. *Cluſ. hiſt.* 2. *p.* 70. *Woodv. med. bot.* 294. *f.* 107. *Ger.* 696. 1. *emac.* 846. 1. *Raii hiſt.* 762. *Park. theat.* 291. 3.
*n.* A. longa hiſpanica. *Baub. pin.* 307. *Park.* 292. *n.* 4. *Raii hiſt.* 762. 4.
*Leaves cordate, petioled, obtuſe; ſtem weak, flowers ſolitary, fruits ovate.*

21. Ariſtolochia hirſuta. *Rough Birthwort.*
*Lin. ſpec.* 1365. *Reich.* 4. 61. *Tournef. itin.* 1. *t.* 147.
*Leaves cordate, rather obtuſe, ſhaggy: flowers ſolitary, pendulous, recurved, ſubtruncate.*

22. Ariſtolochia clematitis. *Common Birthwort.*
*Lin. ſpec.* 1364. *ſyſt.* 825. *Reich.* 4. 61. *mat. med.* 197. *hort. cliff.* 432. *Hudſ. angl.* 394. *Wilb.* 1003. *Relh. cantabr. n.* 665. *Haill. helv.* 1029. *Mill. illuſt. Mill. ſig. t.* 51. *f.* 1. *Sauv. monſp.* 111. *Scop. carn. n.* 1137. *Pollich pal. n.* 863. *Villars dauph.* 275. *Baub. pin.* 307. *Cluſ. hiſt.* 2. *p.* 71. *Fuchſ. hiſt.* 90. *Dod. pempt.* 326. *Lob. obſ.* 332. 2. *ic.* 1. 697. 2. *Blackw. t.* 255. *Rivin. mon. t.* 116. *Mor. hiſt.* 12. *t.* 17. *f.* 5. *Ger.* 697. *emac.* 847. 4.
*Leaves cordate, ſtem erect, flowers axillary, crowded.*

* *New ſpecies.*

23. Ariſtolochia ſcandens.
*Mill. dict. n.* 10.
*Leaves cordate, on very long petioles; ſtem climbing, flowers terminal, on very long peduncles.*

24. Ariſtolochia conferta.
*Mill. dict. n.* 11.
*Leaves cordate, petioled; ſtem climbing: flowers axillary, crowded.*

[25. Ariſtolochia bracteata.
*Retz. obſ.* 5. 29. *n.* 80.
*Leaves cordate obtuſe, ſtem weak, flowers ſolitary, bractes cordate petioled.*

26. Ariſtolochia obtuſata.
*Swartz. prodr.* 126. *Plum. ic.* 27. *t.* 33.
*Leaves cordate, rounded at the tip, three-nerved, beneath netted and tomentoſe; ſtem twining; peduncles ſolitary.*

27. Ariſtolochia grandiflora.
*Swartz. prodr.* 126. *Brown. jam.* 327. *n.* 2.
*Leaves broad-cordate, ſtem twining ſubherbaceous, peduncles ſolitary, lip of the corolla very large, with a very long tail.*

DESCRIPTIONS, *&c.*

Roots perennial. Stems of ſome ſhrubby, but of moſt dying to the ground annually; erect in ſome, but in moſt, eſpecially the exotic ſorts, twining. (1—6. 9—11. 13, 14, 15. 23. 27.) Leaves alternate. Flowers axillary, irregular and of a ſingular form, the tube in ſome ſhaped like a drinking-glaſs, but bent inwards; allied to *Cytinus* by their ſhort ſtyle, and their large ſtigma to which the anthers are faſtened at bottom.

1. Stem filiform, ſubdivided, round, ſmooth. Leaves petioled, patulous, cordate; lobes oblong, obtuſe, entire, nerved, ſmooth, glaucous beneath. Petioles ſhort, filiform, crooked, ſmooth. Peduncles longer than the leaves and petioles, thickiſh, round, one-flowered, ſhrivelling after flowering time. Corolla ligulate, ſuperior: tube globoſe at the baſe, many-keeled, glaucous, narrower above the baſe, curved, hexagonal, blueiſh; throat funnel-ſhaped, pale with longitudinal brown lines; limb or border elongated, ſpatulate, compreſſed at the baſe, acuminate at the tip, the edges rolled back, villoſe in front with a blueiſh-purple pile, purpliſh within, glaucous on the outſide. Anthers ſix, longitudinal, ovate, faſtened to the ſtigmas at the bottom of the tube, yellow. Germ columnar, elongated, hexagonal: ſtyle none: ſtigmas ſix, upright, triangular, with the edges rolled back. Capſule oblong, hexagonal, black, marked with ſix ſtreaks, ſhaped like a baſket, opening from the top into ſix parts, with a peduncle divided into ſix parts, hanging down, ſix-valved: partitions membranaceous. Seeds very many, incumbent, compreſſed, membranaceous, cordate, acuminate, ſmooth, brown [a].

Native of Dominica and Hiſpaniola, covering the trees and ſhrubs, and flowering from november to january.

2. This alſo is a climbing plant. The ſtem is aromatic. The flowers are very large and ventricoſe [b].

The roots of this and of the tenth ſpecies have a ſtrong ſmell, and are looked upon as warm attenuants, and active diaphoretics and ſtomachics: they are adminiſtered in infuſions, and greatly uſed among the ſlaves in Jamaica, where they grow naturally. This ſpecies is moſt common on the north ſide of the iſland, and is therefore called there Contrayerva of the north ſide [c]. It is native not only of the iſlands, but alſo of the continent of South

[a] Swartz. [b] Linn. ſyſt. [c] Browne.

America,

America. It was introduced here about 1775, and flowers in june and july [a].

3. The flowers of this are ſmaller, and have only five ſtamens. It is a native of America [a].

4. Root woody, corky, perennial. Stem twining, filiform, ſubdivided, round, ſtriated, ſmooth. Leaves petioled, ſmaller, nerved, entire, ſmooth, ſomewhat rigid. Petioles embracing the ſtem like tendrils. Peduncles longer and thicker than the petioles, and oppoſite to them, ſmooth, round, one-flowered. Corollas middle-ſized, brown, dotted and ſpotted: tube globoſe at the baſe, crooked, reflex, ½ inch in length, brown dotted with green; throat and tube pubeſcent at bottom, and funnel-ſhaped; border having a lip an inch in length, tongue-ſhaped, retuſe at the tip, ſlightly emarginate, ſet with convex, acute, dark-purple dots, green below the tip to the throat. Anthers ovate, yellow, fixed to the ſtigmas under their revolute edges. Germ attenuated at the baſe, hexangular: ſtyle none: ſtigmas ſix, triangular. Capſule oblong, opening from the top, ſix-valved. Seeds compreſſed. It is not very properly named *peltata*, for the petiole is at the edge of the leaf, and makes an obtuſe angle with it. In Jacquin's figure, the tube ſhould have been repreſented more crooked, reflex, and ſlightly angular, and the lip leſs hairy; in other reſpects it is a good one.

Native of St. Domingo, in very dry coppices, flowering there in february and march [f]; alſo of the continent of South America.

5. Stem corky next the root. Flowers curved. Fruit like a purſe, very large, ſix-valved, cohering at the top, opening at the baſe even in the peduncle; it is all interwoven with tranſverſe threads [a].]

It has ſtrong climbing ſtalks, by which it mounts up to the top of the talleſt trees; the leaves are four inches long and two broad, of an oval ſhape, rounded at their ends, and nearly as thick as thoſe of the common Laurel; the flowers come out in looſe cluſters at the ends of the ſhoots, each ſtanding on a very long peduncle; the ſeed-veſſels are four inches long, and as much in circumference, with ſix longitudinal ribs which are very prominent. Seeds heart-ſhaped. This ſort was diſcovered, and ſent to England by Mr. Robert Millar, from Carthagena in New Spain. [It has been found alſo ſince by Profeſſor Jacquin, who has given an elegant figure of it.

6. Stem twining, filiform, ſubdivided, round, ſmooth; branchleta alternate, ſpreading, looſe, three-leaved or four-leaved. Leaves petioled, entire, ſtiffiſh, ſmooth. A ſhort tendril at the baſe of each petiole. Peduncles longer than the petioles, round, one-flowered. Corollas middle-ſized, brown-purple, ſtriated: tube globoſe at the baſe, contracted in the middle, round, villoſe within; border elongated, oblong, blunt, reflex; the funnel of the tube is ſplit into two parts, when the corolla is, as it were, bilabiate. Capſules roundiſh, hexagonal, blunt, ſmooth, pendulous. Native of Hiſpaniola, in hedges, on a calcareous ſoil; flowering in ſpring [a]: alſo of the continent of South America.]

7. This riſes with an upright ſtalk to the height of three feet. Leaves long, narrow, hairy, growing cloſe to the branches, having ſcarce any foot-ſtalk. The flowers come out ſingly from the axils, are near four inches long, of a dark purple colour, and grow erect; theſe are ſucceeded by ſlender veſſels, about one inch long, filled with flat heart-ſhaped ſeeds. It was diſcovered at La Vera Cruz in New Spain, by the late Dr. Houſtoun, who ſent the ſeeds to Europe: [and was cultivated by Mr. Miller before 1733, in which year the doctor died.]

8. This riſes about two feet high. The branches are not very woody, but are ſtrong enough to ſupport themſelves. The flowers come out ſingly at the axils. It grows naturally in North America, and is by ſome called *Snakeroot*, but is not near ſo ſtrong as the ſeventeenth ſort. The branches of this grow erect, and are perennial, whereas thoſe of the other ſort decay to the root every winter.

[9. The lobes of the leaves lap over each other at the baſe. The lip of the corolla ends in a briſtle-ſhaped tail [i]. Jacquin's figure is excellent. The ſynonym from Browne will be found under the 27th ſpecies [k]. Native of America.

10. This has a long, round, geniculated root, as thick as a finger; whence riſes a round, green, climbing ſtem, taking hold of any tree or ſhrub it comes near, to the height of ſix or eight feet, covering them with its numerous branches, and putting forth leaves at every two or three inches. Leaves cordate or triangular, roundiſh at the baſe, where they are three inches and a half long from one round ear to the other, their length is four inches, they are of a dark green colour, ſmooth, and have longitudinal ribs, taking their original from the end of the foot-ſtalk, which is an inch and half long. Peduncles three inches in length. Corolla yelloviſh, the lip covered with a purple farina. Fruit two inches long, hexangular, containing in ſix cells ſo many rows of ſmall, flat, brown ſeeds, exactly the ſhape of a heart, the points lying inwards, and the baſes to the angular capſule, which, when ripe, opens, and the ſeeds drop out. The whole plant ſmells very ſtrongly, and very gratefully [l].

This is a native of Jamaica, where it is called Contrayerva of the ſouth ſide, to diſtinguiſh it from the ſecond ſpecies. It has the ſame qualities with that, and is uſed for the ſame purpoſes [m].

It was cultivated in 1752, by Mr. Miller [n].

11. This is a tall twining ſhrub. Root woody, ſparingly branched, fragrant, having the ſmell of camphor. Stems wrinkled, gray, fragrant. Branches and twigs alternate, ſarmentoſe, obſcurely flexuoſe, round, even, green, becoming gray. Leaves ſpreading, remote, roundiſh, ſinuate-cordate, acuminate or ſcarcely acute, entire, villoſe and paler beneath, veined; the nerves prominent on the lower ſurface; flat, in length and breadth ſix inches. Petioles ſhorter than the leaves, ſemicylindric, grooved above, ſomewhat villoſe. Peduncles lateral, at the joints below the leaf, pendulous, longer than the petiole, one or two together, one-flowered. Bracte embracing the middle of the peduncle, decurrent a little, leafy, roundiſh, cordate, villoſe beneath, ſpreading, caducous. Corolla purpliſh-brown, one inch and a half long, ten or twelve lines broad: tube ſhaped like a ſiphon, marked with lines, bellying at the baſe, in the middle broader and flatted a little, at the end narrow and cylindrical: border marked with brown lines, ſpreading, inclined, waved, trifid, the clefts rounded and ſlightly acuminate. Filaments none: anthers ſix, faſtened to the ſtigma by pairs beneath, ovate, two-celled, yellow. Germ a hexangular column, finely villoſe: ſtigma at the bottom of the corolla, very large, roundiſh, three-valved, furniſhed with three points. Capſule cylindrical, with a blunt point, ſix-nerved, ſix-valved, ſplitting into ſix parts from the very peduncle; the cells covered with a tranſparent membrane forming a ſort of common aril for the ſeeds: it is three or four inches long, and one inch broad. Seeds numerous, obovate, flat, rufous, ſhcumbent: faſtened to each other by pairs, only one of which is fixed to the partition.

This ſpecies is diſtinguiſhed by the form of its flower, bent like a ſiphon or ſome tobacco-pipes; by the trifid, flat border; by the very large bracte placed on the middle of the peduncle; by the diſpoſition of the ſeeds, and the aril common to all the ſeeds of each cell [o]. Native of North America. Mr. John Bartram introduced it here about 1763. It flowers in june and july [p]. Monſ. L'Heritier ſays, that it flowers in the ſpring, and ripens its ſeed in autumn, but rarely.

12. Root long, thick, pale-coloured. Stems ſlender, long, jointed, purple. Corollas purple [q], ſtraight, truncated, as it were, with a lanceolate lip [r].

[a] Hort. kew. [b] Linn. ſpec. [f] Swartz. [i] Lin. ſyſt. [k] Swartz. [l] Linn. ſpec. [m] Swartz. [n] Sloane. [o] Browne. [p] Hort. kew. [q] L'Heritier. [r] Hort. kew. [s] Morilon. [t] Linn. ſpec.

If the juice of the root mixed with the ſaliva, be put into the mouth of a ſerpent, it may be handled with ſafety; but will return to itſelf after ſome hours [a].

Several of the other ſpecies have the reputation of being fatal to ſerpents. This is a native of Mexico and the Weſt-Indies.

13. Stems ſeveral, ſlender, filiform, whitiſh, from the upper part of which come ſeven or eight leaves on each ſide, aſh-coloured, oppoſite, in ſize and ſituation reſembling thoſe of *Oſmunda regalis*, but eared at the baſe, like ſome ſorts of Sage; among the lower of theſe, which are ſomewhat more diſtant from each other than the upper ones, come out the flowers, rather larger than thoſe of common Birthwort, of a browner colour, and on longer pedunclcs. The plant has an unpleaſant ſmell; and the root, which runs deep into the ground, appears to be of the ſame quality with ſeveral other ſorts of Birthwort [b]. Rauwolff obſerved it about Aleppo, in olive-grounds.

14. Stems ſhrubby, round, ſlender, ſtriated, branched, long, interwoven. Leaves quite entire, ſmooth, frequently retuſe or emarginate, never acuminate, on petioles two or three lines in length; on the twigs they are blunt, almoſt tranſverſe at the baſe. Peduncles many-flowered, axillary, about the ſame length with the petioles, with alternate, acute bractes, within each of which is a ſingle flower on its proper pedicel: corolla duſky-purple; anthers ſix, on a very ſhort, thick ſtyle. Capſule roundiſh, hexagonal [c].

Native of the Eaſt-Indies and Cochinchina. The whole plant is bitter, without much ſmell. The root is thought to be attenuant and deobſtruent [d].

15. Root very long, pale-coloured, ſomewhat aſtringent with manifeſt acrimony. The whole plant is odorous. Stems ſlender and ſtriated, ramping over hedges and buſhes. Leaves acuminate, the upper ſurface ſmooth and green, the lower whitiſh purple, on long petioles. Flower crooked, oblong, very dark purple, pubeſcent within, on very long peduncles [e]. The ſtipules are ovate-rhombed and mucronate [f]. Found by Cluſius about Seville, and in ſeveral other places of Andaluſia. Evergreen, and flowering in january and february.

Cultivated by Gerard, in 1597, and called by him and Ray *Climbing Birthwort*.]

16. Roots many, ſlender, odorous. Stems many, trailing, ſlender, a foot or eighteen inches in length, angular, ſtriated, branched, tough, and pliable, dark green, ſpreading on the ground. Leaves nerved, very dark coloured, evergreen, on long petioles. Flowers axillary, crooked, longer than the leaves, of a dark purple colour on the outſide, but yellowiſh within. Fruits like thoſe of long-rooted Birthwort, but ſmaller [g]. Native of the iſland of Crete or Candia. It flowers in may and june; and was cultivated in the botanic garden at Chelſea, in 1739 [h].

17. Root a congeries of ſmall fibres, of a yellow colour, and aromatic ſmell and taſte. One or two ſtems riſe from it, ſmooth or very little hairy, the joints very knotty, generally erect. Leaves, one at each knot, ſlender, long, acuminate, ſomewhat hairy above, rough with protuberant nerves underneath, rather glutinous. One or two flowers grow cloſe to the ground; theſe differ in form from the other ſpecies, terminating in a broad, round heel, ſupporting the lip, the centre of which opens into the hollow of the flower, and is of a dark purple, the reſt of the flower is of a muddy colour. Capſule pear-ſhaped, near an inch in diameter. After the ſeeds are ripe, the ſtems decay. It flowers in may, and perfects its ſeeds in auguſt [i].

The root is a warm diaphoretic and diuretic. It is reckoned one of the principal medicines of the alexipharmic kind; and as ſuch is in general uſe in low malignant fevers and epidemic diſeaſes. It is given in ſubſtance from a few grains to a ſcruple or half a dram; in decoction or infuſion, to a dram and upwards. A tincture of it is prepared by digeſting three ounces in a quart of ſpirit of wine eight days; and a ſpirituous alexeterial water mixed with one-ſixth its quantity of diſtilled water. It is alſo an ingredient in the compound tincture of Bark, and the *Cataplaſma Cumini* [k].

Native of Virginia and Carolina. Cultivated by Mr. John Tradeſcant at South Lambeth in 1632 [l]. Introduced in 1770, by Mr. William Young [m].

18. Roots round, numerous. Stems angular, branching, ſeldom riſing to a foot in height, and ſcarcely able to ſupport themſelves. A ſmall heart-ſhaped bracte ſits cloſe at the baſe of the peduncle. The flower is ſmall, the lip is bent inwards: the tube and beginning of the petal are yellow, the broader end is blood-coloured. The fruit is petioled, ovate and grooved [n].

Native of the ſouth of France, Switzerland, and Spain. Cultivated by Gerard in 1596.]

19. Roots roundiſh, growing to the ſize of ſmall Turneps, in ſhape and colour like thoſe of the common Cyclamen, which are frequently ſold for roots of the round Birthwort in the markets. They ſend out three or four weak trailing branches, which lie on the ground where they are not ſupported, and extend to the length of two feet. The leaves are rounded at the end. The flowers come out ſingly, cloſe to the petioles, towards the upper part of the ſtalk: they are of a purpliſh black colour. Capſules oval.

[The ſtems are angular: the lip of the corolla curved inwards [o]; the tube hexagonal below the middle; the peduncles pentagonal [p].

The leaves of this ſpecies have ſcarcely any petioles; but there is a variety, named by Caſpar Bauhin *A. rotunda, flore ex albo purpuraſcente*, which has the leaves on longer petioles [q]. It differs, he ſays, from the other, not only in the colour of the flower, but in the leaves and fruit [r]. It is ſaid alſo to be hardier, and to flower earlier [s].

Round-rooted Birthwort is a native of the ſouth of Europe, and flowers from june through the autumn.]

20. This has long tap roots, ſhaped like thoſe of Carrots; theſe ſend out weak trailing branches, which extend little more than a foot: the leaves are paler, and have longer foot-ſtalks than the foregoing: the flowers are not ſo long, and are of a pale purple colour. Capſules oblong. The ſtalks of both decay in the autumn, and new ones are produced in the ſpring.

[Long-rooted Birthwort is a native of the ſouth of Europe, and alſo of Japan; it flowers at the ſame time with the other. Linneus indeed thinks, that they are ſcarcely diſtinct ſpecies. They were both cultivated by Gerard, in 1596 [t].]

21. This has ſome reſemblance to the foregoing, but the leaves are hairy, and not ſo deeply eared at the bottom; the flowers alſo are much larger. [The ſtem is ſtriated and hairy; the leaves obtuſe with a dagger point; the corolla incurved and recurved without an elongated lip [u]. It is thus deſcribed by the elegant Tournefort, who firſt obſerved it. The root is a foot and half or two feet in length, and two inches in thickneſs, hard, woody, yellowiſh marbled with rays of white and ruſſet, covered with a rough bark of a purpliſh colour: it has only few fibres, and is inſupportably bitter. Stems two feet high, firm, ſolid, two lines in thickneſs, pale green, channelled, purpliſh at the baſe, lying on the ground. At each knot is a ſingle leaf, three inches long, and two wide at the baſe, which is rounded into two ears, above theſe it becomes ſenſibly narrower: the upper ſurface is browniſh-green, ſhining, and veined in trapeziums. From their axils ſpring a flower, bent in ſhape of an S, three inches and a half long, on a peduncle from one to two inches in length: the baſe is eight or nine lines wide, pale-green mixed

[a] Jacquin. [b] Rauwolff [c] Loureiro & Linn. zeyl. [d] Loureiro. [e] Clufius. [f] Linn. ſpec. [g] Clufius. [h] Hort. kew. [i] Banifter in Ray's hiſt. vol. 3. [k] Lewis. [l] Johnſon in Ger. herb. [m] Woodville. [n] Haller, Linn. Villars. [o] Linn. ſpec. [p] Scopoli. [q] Linn. ſpec. [r] Bauh. pin. 307. 2. [s] Clufius. [t] Hort. kew. [u] Linn. ſpec.

with purple, and angular; the tube is half an inch over, terminated by a throat eighteen or twenty lines in diameter, and almoſt oval; the hollow of it is beſet with white hairs, a line and half in length; the bottom is purple, black, and livid, with ſome ſtreaks of a paler colour inclining to yellow; and it has a large ſwelling where the throat begins to contract; the inſide of the tube is blackiſh-purple, and covered with hairs, as is alſo the baſe, which is of a paler colour. This flower has no ſmell. The whole of the plant is bitter.

It is a native of the iſland of Scio or Chios[p].

22. Common Birthwort has an erect ſtem, from two to three feet high, ſimple, ſtriated, round and ſmooth, taking a different direction at each joint, which is ſmooth and ſhining. Leaves obtuſely heart-ſhaped, above bright, beneath pale green, ſmooth, veiny, on footſtalks nearly as long as the leaves. Flowers axillary, ſometimes ſix or more, on peduncles erect or hanging down, yelloviſh green, ſtriated, the lip often tinged with purple. Capſule ovate, obtuſe, hanging down[q]. *Tripula pennicornis* is ſaid to fecundate the flowers[r]. It dyes wool of a good yellow; and is in flower from june to ſeptember. Native of France, Spain, Italy, Auſtria, Carniola, Germany, Hungary, and Tartary. Haller thinks it hardly a native of Switzerland. Mr. Miller will not allow that it grows wild in England; it is however found, though rarely remote from gardens, in hedges and woods; as in a wood two miles from Thorndon in Eſſex[s]; near Maidſtone, and other places in Kent[t]. Mr. Woodward obſerved it near Stuſton in Suffolk[u]; and Profeſſor John Martyn, in the hedges at Whittlesford in Cambridgeſhire, before the year 1732.

All the Birthwort roots (n. 18, 19, 20, and 22) have an aromatic ſmell, and a warm, bitteriſh taſte. Boerhaave ſays they are the hotteſt of the aromatic plants: he probably ſpeaks of the freſh roots, for thoſe which are uſually met with in the ſhops, have no great pungency. The long and round ſorts, on firſt chewing, ſcarcely diſcover any taſte, but in a little time prove naſeouſly bitteriſh; the round ſomewhat the moſt ſo. The other two inſtantly fill the mouth with a kind of aromatic bitterneſs, not very ungrateful.

They are celebrated as warm attenuants and deobſtruents, particularly in ſuppreſſions of the uterine purgations: the doſe is from a ſcruple to a dram and upwards. They have been likewiſe recommended, particularly the 21ſt, as alterants in the gout: Boerhaave obſerves, that the pituitous gout, as he calls it, is often relieved by an infuſion of theſe roots in ſpirit of juniper-berries, ſweetened with ſugar, and taken to the quantity of a ſpoonful at a time; but that in other kinds of the gout, and in ſubjects of a tender conſtitution, this medicine occaſions a loſs of appetite, a weakneſs of the ſtomach, and a languidneſs, leſs ſupportable than the gout itſelf: a powder compoſed of this and other ſimilar materials, which was preſcribed by the ancients as an antiarthritic, and has come again into eſteem, has alſo produced complaints of the ſame kind. Externally theſe roots have been uſed as diſcutients, detergents, and antiſeptics: Simon Paulli relates, that the long Birthwort roots applied as an epithem or in fomentation, were found remarkably ſerviceable in ſtubborn ulcers of the legs[x].

23. This ſends out climbing ſtalks, which ſupport themſelves by faſtening to the neighbouring trees, and thereby riſe to a very great height: the leaves are very broad, and have ſeveral longitudinal veins; the flowers grow in looſe bunches at the extremities of the branches, each have a long peduncle. It grows naturally about Tulu in New Spain, where it was diſcovered by Mr. Robert Millar, who ſent the ſeeds to England.

24. This ſeldom climbs above three or four feet high: the leaves are ſhort, in ſome meaſure like thoſe of the 19th ſort: the flowers come out in ſmall cluſters from the axils, and are of a dark purple colour. It was diſcovered by Mr. Robert Millar at Campeachy in New Spain, whence he ſent the ſeeds. [Theſe two ſpecies are not noticed by Linnæus or any other author. The three following ſpecies are alſo new ones.

25. Stem flexuoſe ſtriated. Leaves petioled. Flowers pedunculed, ſhorter than the leaf, with a long, curved lip. Found by Koenig about Madras. It is uſed in medicine by the Indians[y].

26. Native of the Caribbee iſlands[z].

27. This bears very large flowers, which are ſeldom under five or ſix inches round the margin; but the *rima*, or opening of the flower, continues cleaved up, longitudinally, for a conſiderable time; and terminates in a long, ſlender appendix, at the lower extremity. Native of Jamaica, where it is very common in St. Ann's[a].]

PROPAGATION AND CULTURE.

All theſe ſorts, which are natives of hot climates, (n. 1 to 7, 9, 10, 12, 14, 23—27.) are too tender to thrive in the open air in this country, therefore require a ſtove to preſerve them. They are propagated by ſeeds, which muſt be procured from the countries where they grow naturally, for they do not produce any here. As the ſeeds are a conſiderable time in their paſſage, they ſhould be brought over in their pods; for many of the ſorts have very thin light ſeeds, which are ſoon dried in a hot country, when they are out of their covers, which will prevent their growing. So ſoon as the ſeeds arrive, they ſhould be ſown in ſmall pots filled with light earth; and if this happens in the autumn, or winter, the pots ſhould be plunged into the tan in the bark-ſtove, between ſome of the pots with large plants, which will ſcreen them from the ſun; for as theſe plants delight in ſhade, ſo, by thus placing the pots, the earth will not dry very faſt, which will be of great advantage to the ſeeds, which ſhould not be too often watered. Here the pots may remain till march, at which time they ſhould be removed, and plunged into a hot-bed, under frames, where, if the ſeeds are good, the plants will appear in may: but if the ſeeds arrive in ſpring or ſummer, they muſt be immediately ſown in ſmall pots, and plunged into a moderate hot-bed, obſerving to ſhade them conſtantly in the heat of the day; but the ſeeds ſown at this ſeaſon ſeldom grow the ſame year; therefore if the plants do not appear, the pots ſhould be plunged in the tan-bed of the ſtove in autumn, and in the ſpring following, treated as before directed, which will bring up the plants. When theſe are ſtrong enough to tranſplant, they ſhould be each put into a ſeparate ſmall pot, and plunged into the tan-bed in the ſtove, and treated as other tender plants from the ſame countries.

8. Tree Birthwort will live abroad in a warm border, with a little protection in hard froſts. It is generally kept in a pot, and ſheltered in winter, but will thrive much better when planted in the full ground.

11. Is hardy: and may be increaſed by ſeeds, and ſuckers, or by parting the roots.

13, 15, 16, 18. Are propagated by parting the roots. They are too tender to thrive in the open air in hard winters: they are preſerved therefore in pots, and placed under a common frame, where they may have as much free air as poſſible in mild weather, but may be ſcreened from ſevere froſt: ſome plants at leaſt ſhould be ſheltered to preſerve the ſpecies.

17, 19, 20, 21. Are propagated by ſeeds, which ſhould be ſown in the autumn, in pots filled with light earth, and placed under a frame, to be ſcreened from the froſt, but the glaſſes ſhould be taken off at all times when the weather is mild. If theſe pots are put into a gentle hot-bed in march, it will bring up the plants much ſooner than they other-

[p] Tournefort voyage, 2. p. 79. edit. 1717. 8vo.
[q] Woodw. M.S. With. [r] Schreber in Linn. ſyſt. [s] Blackſtone.
[t] Hudſon. [u] Withering. [x] Lewis.
[y] Retz. [z] Swartz. [a] Browne.

wife would riſe. As the ſeaſon advances, the plants ſhould be inured by degrees to bear the open air: when the pots are taken out of the bed, they muſt be placed where they may enjoy the morning ſun, but ſcreened from it in the heat of the day. Gentle refreſhings of water muſt be in dry weather given to the plants during the ſummer, but in the autumn, when their ſtalks begin to decay, they muſt have little wet. In the winter the pots muſt be ſheltered as before; and in march, before the roots begin to ſhoot, they ſhould be tranſplanted into ſeparate ſmall pots filled with light earth, and ſet under the frame, where they ſhould remain till ſpring; then they may be removed into the open air, and treated in the ſame manner as in the former ſummer, and ſheltered alſo the following winter. The next ſpring they may be turned out of the pots, and planted in a warm border, where, during the ſummer, they will require no other care but to keep them clean from weeds; and in the autumn when their ſtalks are decayed, if the border is covered with old tanners bark to keep out the froſt, the roots will be ſecured; but where this care is not taken, the roots are frequently killed by froſt. With this management the roots will thrive much better than thoſe which are kept in pots, and continue longer; and when they are three years old, they will flower and produce plenty of ſeeds, whereas thoſe in pots ſeldom perfect their ſeeds in England.

When the ſeeds of theſe plants are ſown in the ſpring, the plants will not appear till the ſpring following; ſo that a whole ſeaſon is loſt, and many times they fail, therefore they ſhould always be ſown in the autumn.

22. Is a terrible plant for creeping at the root; ſo that if it has once taken in a garden, it will be difficult to extirpate it again, and it will overrun whatever plants grow near it; therefore it ſhould be planted in ſome abject part of the garden, and it will thrive in any ſoil and ſituation.

[*The Birthworts* are all perennials, and the greater part of them having weak ſtems, require ſome ſupport. When ſeeds cannot be procured, moſt of them may be increaſed by the roots, or by cuttings, in the ſpring.]

[ARISTOTELIA. (*From the celebrated ancient philoſopher and naturaliſt*, Ariſtotle.)

*Lin. gen. Schreb. n.* 816. *L'Heritier Stirp. nov.* 31. *t.* 16. *Juſſ.* 433.

Claſſ. 11. 1. Dodecandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted; *diviſions* lanceolate, concave, acute, upright.

COR. *Petals* five, wedge-ſhaped, concave, erect, lying over each other at the ſides, ſcarcely longer than the calyx.

STAM. *Filaments* fifteen; (to each petal three, one of which is interior, oppoſed to the petal:) very ſhort: *anthers* linear, ſhorter than the germ.

PIST. *Germ* ſuperior, roundiſh, rather three-cornered: *ſtyle* filiform, longer than the corolla; *ſtigmas* three, recurved.

PER. *Berry* ſubglobular, obtuſely three-cornered, three-celled.

SEEDS two, or ſolitary in each cell, angular.

OBS. *All the anthers ſeen by M. L'Heritier being barren, it may perhaps be dioecous.*

ESSENTIAL CHARACTER.

*Cal.* five-leaved. *Cor.* five-petalled. *Berry* three-celled. *Seeds* two in each cell.

SPECIES.

1. Ariſtotelia Maequi. *Shining-leaved Ariſtotelia. L'Heritier ſtirp. nov.* 31. *t.* 16. *Ait. hort. kew.* 2. 116.

DESCRIPTION, *&c.*

This is a ſmall ſhrub, native of Chili, whence it was firſt ſent to Europe by Dombey. It is known there by the name of *Maequi*. The root is woody, branching, very full of fibres, and of a browniſh colour. Stem upright, brachiate, round, gray with tubercles of a paler colour. Branches and twigs patulous, oppoſite, round, green or red, with wart-like glands. Leaves oppoſite, ſpreading or hanging down a little, oblong-ovate, acuminate, ſerrate, the point almoſt entire, the baſe towards the petiole obſcurely glandular, nerved, beneath three-nerved and veined, the midrib beneath red and prominent, but ſcarcely riſing on the upper ſurface; ſmooth, dry, green, flat, three inches long, and from fifteen to eighteen lines broad: the younger leaves are ſhining, bright green, and a little viſcid. Petioles ſpreading very much, round on the outſide, and ſcarce viſibly furrowed on the inſide, reddiſh, pubeſcent when young, one-third of the length of the leaves. Stipules in pairs, very minute, reſembling glands, ſcarcely ſubulate, becoming tubercles as the twig advances, and then vaniſhing. Peduncles racemed, nodding, terminating or from the upper axils; from the uppermoſt of all they come out by threes; the middle peduncle being longeſt, and bearing from three to five flowers, the others only two or three; they are patulous, pubeſcent, bracted, and eight or nine lines in length. Flowers pedicelled, drooping, globoſe, herbaceous, one or two lines in length and breadth. Pedicels one-flowered, bent back a little, all except the middle ones jointed. Bractes under the pedicels; minute, very narrow, villoſe. Calyx villoſe, one line and a half in length. Style ſometimes three-cleft, ſometimes quite ſeparate into three. Berry the ſize of a pea, very dark purple becoming at length black [a].

Juſſieu remarks, that the number in the parts of the flower is uncertain: the calyx being five or ſix-cleft; the petals five or ſix; the ſtamens fifteen to eighteen, or three to each petal: there are three diſtinct ſtyles.

It flowers in april and may; and was introduced here about 1773, by Meſſrs. Kennedy and Lee [b].

The berries are ſlightly acid, and eatable. The inhabitants of Chili make a wine from them, which they give in malignant fevers. Dombey uſed this remedy with ſucceſs in Chili, againſt the plague, in 1782 [c].

It is hardy enough to bear the open air, in general. Severe winters will probably kill it, unleſs it has the protection of a greenhouſe.

Loureiro has given the name of *Ariſtotelea*, to a genus of the claſs Gynandria, reſembling *Ophrys ſpiralis*, and found near Canton in China.

ARMENIACA. See *Prunus*.

ARMERIA. See *Dianthus*.

ARMERIUS. See *Dianthus* and *Silene*.

ARMORACIA. See *Cochlearia*.

ARNICA. (*From* ἄρνιξ, *lamb, to ſuckle.*)

*Lin. gen.* 958. *Reich.* 1038. *Schreb.* 1296. *Juſſ.* 182. *Gartn. t.* 173.

Claſſ. 19. 2. Syngeneſia Polygamia Superflua.

Natural claſs of *Compoſitae Diſcoideae.—Corymbiferae.* Juſſ.

GENERIC CHARACTER.

CAL. *Common* imbricate, ſhorter than the ray of the corolla: *leaflets* lanceolate, the length of the calyx, erect.

COR. *Compound* radiate. *Corollules* hermaphrodite in the diſk very numerous. *Females* in the ray about twenty. *Proper* of the hermaphrodite tubular, erect, five-cleft, equal. *Female* lanceolate, very long, three-toothed, ſpreading.

STAM. to the hermaphrodites. *Filaments* very ſhort: *anther* cylindric.—to the females. *Filaments* ſubulate, erect: *anthers* none.

PIST. *Germ* oblong: *ſtyle* ſimple, the length of the ſtamens: *ſtigma* bifid.

PER. none. *Calyx* unchanged.

SEEDS ſolitary, oblong. *Down* ſimple—in the hermaphrodites pubeſcent, long.

REC. naked.

OBS. *Corollules of the diſk often trifid: with the outer diviſion twice as broad as the others.*

[a] L'Heritier. [b] Hort. kew. [c] L'Heritier.

ESSENTIAL CHARACTER.

*Recept.* naked. *Down* ſimple. *Corollules* of the ray have five filaments without anthers.

SPECIES.

1. Arnica montana. *Mountain Arnica.*
*Lin. ſpec.* 1245. *Reich.* 3. 833. *mat. med.* 187. *ſuec.* 760. *Gærtn. fruct.* 2. 451. *Fl. dan. t.* 63. *Hall. helv. n.* 90. *Allion. pedem. n.* 743. *Scop. carn. n.* 1086. *Leers herb. n.* 651. *Pallich pal. n.* 809. *Krock. ſilef. n.* 1420. *Villars dauph.* 207. *Blackw. t.* 595.
Doronicum. *Lin. lapp. n.* 304. *Gmel. ſib.* 2. *p.* 153. *Baub. pin.* 185.
β. Arn. alpina. *Lin. ſpec.* 1245. *lapp. n.* 305. *Tabern. icon.* 336.
Caltha alpina. *Tabern. ic.* 336. *Beſl. eyſt. eſt.* 14. *t.* 8. *f.* 2. *Dod. pempt.* 254.
*Leaves ovate entire, ſtem-leaves twin, oppoſite.*

[2. Arnica piloſelloides.
*Lin. ſpec.* 1245. *Reich.* 3. 833. *amœn.* 6. *afr.* 73. After æthiopicus, &c. *Raii hiſt. ſuppl.* 165. *n.* 95.
*Leaves quite entire, elliptic, villoſe; ſcape one-flowered, woolly; calyx equalling the ray.*]

3. Arnica Scorpioides. *Alternate-leaved Arnica.*
*Lin. ſpec.* 1246. *ſyſt.* 768. *Reich.* 3. 833. *Hall. helv. n.* 89. *Gouan. monſp.* 446. *Allion. ped. n.* 744. *Jacqu. vind.* 152. *fl. auſtr.* 4. 26. *t.* 349. *Villars dauph.* 208.
Doronicum. *Baub. pin.* 184. 2. *Cluſ. paun.* 520. 521. 3. *Dalech. hiſt.* 1203. *Lob. ic.* 649. *Blackw. t.* 503. *Geſn. de acon.* 11. *fig.*
After ſcorpioides. *Scop. carn. n.* 1075.
Aconitum pardalianches minus. *Camer. epit.* 824.
a. Doronicum radice dulci. *Baub. pin.* 184. 1. *Lin. ſpec.* 1246.
*Leaves alternate, toothed.*

[4. Arnica Doronicum.
*Lin. ſyſt.* 768. *Jacqu. fl. auſtr.* 1. *t.* 92.
Arn. Cluſii. *Hall. helv. n.* 91. *Allion. pedem. n.* 745. *t.* 17. *f.* 1. 2.
A. ſtiriaca. *Villars dauph.* 210.
Doronicum primum vel minus. *Cluſ. paun. p.* 518. & 2.—auſtriacum. *hiſt.* 17.
*Leaves alternate, ſubſerrate, oblong, rough.*

5. Arnica maritima. *Sea Arnica.*
*Lin. ſpec.* 1246. *Reich.* 3. 834.
After ſ. Helenium maritimum, &c. *Gmel. ſib.* 2. *p.* 175.
*Leaves lanceolate, the lower ones ſerrate: ſtem leafy, many-flowered.*]

6. Arnica crocea. *Saffron-flowered Arnica.*
*Lin. ſpec.* 1246. *ſyſt.* 768. *Reich.* 3. 834.
Gerbera. *Burm. afr.* 157. *t.* 56. *f.* 2.
Dens leonis enulæ folio. *Pet. muſ.* 393. *Raii ſuppl. app.* 238.
Doronicum pumilum, &c. *Pluk. mant. t.* 343. *f.* 4.
Carlina. *Burm. afr.* 154. *t.* 55.
*Leaves ovate, repand-toothletted, tomenteſe underneath.*

[7. Arnica ciliata. *Ciliate-leaved Arnica.*
*Lin. ſyſt.* 768. *Thunb. jap.* 318.
*Leaves ſtem-cluſping, ovate, toothed, ciliate, ſmooth; ſtem ſimple, one-flowered.*

8. Arnica japonica. *Japoneſe Arnica.*
*Lin. ſyſt.* 768. *Thunb. jap.* 319.
*Leaves gaſh-palmated, toothletted, flowers terminal, ſub-binate.*

9. Arnica palmata. *Palmate-leaved Arnica.*
*Lin. ſyſt.* 768. *Thunb. jap.* 319.
Arn. japonica. *Linn. ſuppl.* 376.
*Leaves gaſh-palmated, toothed; flowers panicled.*

10. Arnica Gerbera.
*Lin. ſpec.* 1246. *Reich.* 3. 834.
Gerbera. *Burm. afr.* 155. *t.* 56. *f.* 1.
After africanus, &c. *Raii ſuppl.* 161. *n.* 44.
Doronicum africanum, &c. *Buxb. cent.* 5. *p.* 12. *f.* 24.
Scolopendriæ, &c. *Pluk. alm. t.* 313. *f.* 5.
*Leaves pinnatifid, lobes rounded.*

11. Arnica coronopifolia.
*Lin. ſpec.* 1247. *Reich.* 3. 835.
*Leaves pinnate, diviſions linear.*

12. Arnica oporina.
*Forſt. fl. auſtr. n.* 299.
*Shrubby, leaves lanceolate calleus-crenate tomenteſe beneath, peduncles one-flowered ſolitary terminating ſcaly.*

DESCRIPTIONS, *&c.*

Some of the ſpecies are cauleſcent, but more have ſcapes bearing one flower only; ſometimes theſe have one pair of leaves. The flowers are yellow[a].

1. Root woody, blackiſh, ſuperficial, appearing as if cut off, having bunches of long fibres, perennial. Stem a foot or a foot and half high, not more than ſix inches in alpine ſituations, obſcurely angular, ſimple, terminated by three (ſometimes only two or even one) upright peduncles, each bearing one flower, two inches in diameter, of a deep yellow colour, tinged with brown or tuſſet and orange. Calyx dirty green, cylindric and hairy, compoſed of fifteen or ſixteen ſcales: in the ray about fourteen ligulate florets, twice as long as the calyx, a line or more in breadth, ſtriated, three-toothed, having hairs at their baſe. Seeds oblong, blackiſh, roughiſh and hairy, crowned with a ſtraw-coloured, or ruſſet-coloured down. Receptacle with deep excavations, on the edges of which are very ſmall briſtles, which makes the whole ſeem a little hairy.—The root is aromatic; the whole plant has a ſtrong ſcent, and is acrid[b].

Linneus remarks[c], that the florets of the ray have not only piſtils, but five diſtinct ſtamens, with as many anthers, diſtinct, and longer than the filaments. Haller and Juſſieu affirm that there are no barren filaments in this ſpecies; but Villars, Krocker, and Gærtner have ſeen them.

The flowers follow the ſun. Kine do not touch the plant; but goats are very fond of it. In Smoland, they ſnuff the powder of the leaves up the noſtrils, to make them ſneeze, and ſmoke them as tobacco. Linneus, in his *Flora Lapponica*, ſeparated the alpine from the meadow plant, but he afterwards conſidered them as one ſpecies. The former has very narrow leaves, like *Plantago lanceolata*; the latter has broad ones, like *P. major*; ſo that they have the appearance of being very different[d]: but this difference is probably owing to ſituation: the former being an alpine plant, and the latter growing among graſs on open hills. It is a native of moſt parts of the continent of Europe, and alſo of Siberia. It flowers with us in july, and was cultivated by Mr. Miller, in 1759[e].

In Germany it is eſteemed a ſpecific for reſolving coagulated blood, occaſioned by falls or bruiſes. It is recommended likewiſe in ſundry obſtinate chronical diſorders. It appears to be too violent in its operation for general uſe, unleſs repeated ſmall doſes ſhould be accompanied with the good effects, without the diſturbance, which a full doſe is ſaid to produce[f].

Dr. Collin, of Vienna, recommends beginning with an infuſion of one dram of the herb in flower, morning and evening, increaſing the doſe gradually to half an ounce, and keeping the body open. Infuſed in ſmall beer, and taken as common drink, it is reported to have cured the chronical rheumatiſm of the loins; and in one or two doſes, taken two hours before the fit, to have put a ſtop to intermittents of long ſtanding[g]. Bergius tried this infuſion, and alſo the powder of the root, in quartan agues without ſucceſs[h].

Allioni relates his having cured the palſy by the flowers; but that it did not anſwer with him in putrid fevers. He adds, that his patients could not endure an ounce of the flowers in infuſion, which is what Dr. Collin recommends; and that he never ventured on more than three drams, and that divided into ſeveral doſes.

Villars celebrates the *Arnica* as one of the beſt remedies in the vegetable kingdom: as eminently diuretic and tonic; as a febrifuge, antiparalytic and

[a] Juſſieu. [b] Krocker, Villars, Haller. [c] Fl. ſuec. [d] Ibid. [e] Hort. kew. [f] Lewis. [g] Soc. med. hafn. collect. vol. 2. [h] Mat. med. 2. 685.

antiarthritic.

Antiarthritic. He says, that all parts of it may be used in infusion or decoction, in a dose of half a grain: or, if given in substance, less, especially at the beginning, because it is apt to discourage patients by giving them the heart-burn. How many sick, he exclaims, have I benefited, and even cured of the dropsy, by this simple remedy[1]!

2. A copious down issues from the crown of the root, involving the leaves and stem. The leaves are two or three inches long, and an inch and half broad, hairy, especially on the back, entire and ending in a point[2]. The scape is twice as long as the leaves, more woolly towards the top[3]. The flower is large[4]. The calyx is tomentose, but smooth above, the same length with the ray of the corolla[5]: the florets of the ray are very narrow, dark red[6], or purple, and male; the down is ruffet-coloured[7]. Native of the Cape of Good Hope.]

3. Roots much jointed, dividing into many irregular fleshy offsets, which are variously contorted; whence superstitious persons were formerly led to imagine, that they would expel the poison of scorpions, and cure the wounds made by the bite of that animal. [Stems several, from six or eight inches to a foot in height, terminated by one handsome flower, of a deep yellow colour, two inches over. Root-leaves almost round or oval, deeply serrate, terminating suddenly in a short point, and placed on long petioles: stem-leaves few, almost sessile: all soft, shaggy, and viscid. Calyx shaggy, open; the outer scales longer and wider. Ray of the corolla very open. Seeds a little hairy, short, crowned with an egret. The root and the whole plant has a strong disagreeable smell, especially in the shade and exposed to the north[8].

Monf. Villars has found this plant with the florets of the ray hermaphrodite. He has also found a plant like it, but with the marginal seeds naked, the leaves wider, heart-shaped, and the whole plant more robust; he thinks it may be *Doronicum majus efficinarum* of Morison, III. 127.; and perhaps *D. austriacum* of Jacquin, *fl. austr.* 2. *t.* 130. but it has more resemblance to an *Arnica* than a *Doronicum*[9].

*A. scorpioides* is native of Switzerland, Savoy, Dauphiné, and Austria.] Mr. Miller says, that he received the seeds from Bohemia, and Siberia. [He cultivated it in 1759[10].

4. This plant varies in its leaves, which are ovate or elliptic, or especially on the stem very long ellipses; sometimes they are quite entire about the edge, but they have generally a few teeth; these are sometimes large, and so remote that the leaf becomes angular; the surface of the leaves is hairy more or less, shorter or longer. The height is generally four inches, but sometimes it is twice as high. The stem always bears one flower[11].

Haller says, from Clusius, that the root-leaves are ovate; the stem-leaves petioled, tongue-shaped, obtuse, soft and shaggy: the flower golden. He adds, from Scheuchzer, that the root-leaves are not serrate, and that they stand on long petioles; that the stem-leaves are sessile, shaggy, rough, and broader than in Clusius's figure.

According to Villars, his *A. pyrenaica* is a middle species between *A. scorpioides* and *Senecio Doronicum*. The root-leaves are oval and pointed, quite entire and petioled: the stem-leaves are few and narrower: they are all pale-green inclining to yellow, though covered with straight short hairs. The florets in the ray have neither stamens nor filaments. All the seeds are crowned with down. The root-leaves are sometimes rooted[12].

Native of the high alps of the Grisons, Dauphiné, Piedmont, and Austria.

5. Native of Kamtschatka and North America.

6. Crown of the root woolly. Root-leaves petioled, an inch and half or two inches long and an inch broad, rigid, smooth on the upper surface, generally oval, but sometimes heart-shaped. Scapes one-flowered, with a few linear bractes. The florets of the ray are furnished with stamens. Native of the Cape of Good Hope[13].

7. Stem angular, hispid with white bristles, upright, a foot high. Leaves alternate; the lower attenuated at the base, obovate, gash-toothed, with unequal teeth, the edge and keel beneath ciliate, smooth above, two inches long; the upper ones roundish, scarcely toothed, ciliate, smaller. Flower terminating, red, the size of a small pear.

8. Stem hollow, round, striated, smooth, upright, a foot or more in height. Leaves petioled, alternate, smooth, green above, pale beneath, the lobes gash-pinnatifid, toothed. Petioles of the lower leaves long and striated; of those on the branches broad, stem-clasping, striated and short. Flowers pedunculed, two or few at the most, red.

9. Stem round, very finely streaked, upright, smooth, two feet high. Leaves alternate, petioled, smooth, green above, pale beneath, the lobes of the lower leaves unequal, toothed; the upper undivided, serrate. Petioles of the lower an inch long, of the upper scarcely a line in length. Flowers terminating, small, yellow. This, and the two foregoing are natives of Japan[14].

10. Crown of the root woolly. The leaves have the lobes imbricated backwards, and whilst young they are tomentose underneath. The scape is surrounded with very slender leaves, and supports one large flower, with a dark purple disk, and a yellow ray purple underneath. Native of the Cape of Good Hope[15].

11. Very nearly allied to the foregoing; and a native also of the Cape[16].

12. Native of New Zealand[17].]

PROPAGATION AND CULTURE.

1, 2, 3, 4, 5. The European sorts are hardy, and require a moist shady situation. They may be propagated by parting the roots in autumn when the stalks begin to decay; or by the seeds sown in autumn, soon after they are ripe, for those sown in the spring often fail: but if the seeds are permitted to scatter, the plants will often come up of themselves, without any other care but to keep them clean from weeds.

[The other species must be kept in pots under a frame, or in a dry stove. They may be increased by seeds, cuttings, or parting the roots; and must be treated as other plants from the Cape of Good Hope.

ARNICA. See *Doronicum*.

ARNOSERIS. See *Lapsana*.

ARNOTTO. See *Bixa*.

ARONIA. See *Orontium*.

ARROW-HEAD. See *Sagittaria*.

ARROW-HEADED GRASS. See *Triglochin*.

ARROW-ROOT, Indian. See *Maranta*.

ARSMART. See *Polygonum*.

ARTANICA. See *Cyclamen*.]

ARTEDIA. (*From Peter Artedi, student of medicine in Sweden. He arranged the umbellate plants from the calyx, and died in* 1735.)

*Lin. gen. n.* 332. *Reich.* 363. *Schreb.* 465. *Juss.* 224. *Gaertn. t.* 85.

Class. 5. 2. Pentandria Digynia.

Nat. order of *Umbellatæ* or *Umbelliferæ*.

GENERIC CHARACTER.

CAL. *Umbel universal* spreading, flat, manifold. *Partial* small, similar.—*Involucre universal* about ten-leaved: *leaflets* ovate-oblong, three-bristled at the end, nearly the length of the umbel.—*Partial* two or three-leaved, verging outwards: *leaflets* linear, pinnate, longer than the umbellule.

COR. *universal* difform, radiate. *Florets* of the disk abortive. *Proper of the disk* male: petals five, cordate-inflex, erect——*of the ray* hermaphrodite, with similar petals, but the outmost larger.

[1] See more in Krocker, Allioni, Haller, Collin, Bergius, Murray, Woodville, &c. [2] Ray. [3] Linn. amæn. [4] Ray. [5] Linn. amæn. [6] Ray. [7] Amæn. [8] Villars and Haller. [9] Villars dauph. 310. [10] Hort. kew. [11] Allioni. [12] Dauph. 211. [13] Linn. spec. & syst. [14] Thunberg. [15] Linn. spec. & Ray hist. [16] Linn. spec. [17] Forster.

STAM. *Filaments* five, capillary in all the flowers: *anthers* ſimple, roundiſh.
PIST. *of the ray, germ* ſmall, inferior: *ſtyles* reflex: *ſtigmas* ſimple.
PER. none. *Fruit* roundiſh, compreſſed, leafy-ſcaled on the edge, bipartile.
SEEDS *two, oblong, ſet about the edge with roundiſh, ſpreading, ſcales.*

ESSENTIAL CHARACTER.

*Invol.* pinnatifid. *Hoſcules* of the diſk male. *Fruit* rough with ſcales.

SPECIES.

1. Artedia ſquamata.
*Lin. ſpec.* 347. *Reich.* 667. *hort. cliff.* 89. *upſ.* 58. *Gron. orient. n.* 81. *Gærtn. fruct.* 2. 33.
Thapſia orientalis. *Tourn. cor.* 22. 1. *itin.* 3. 298. *Mor. hiſt. ſ.* 9. *t.* 18. *f.* 11. (bad).
Gingidium ſoeniculi folio. *Baub. pin.* 151. *Raii hiſt.* 416. *n.* 3.
G. Dioſcoridis. *Rauw. itin.* 287. *t.* 38.
G. Rauwolfii. *Cam. hort.* 67. *t.* 16.

DESCRIPTION, *&c.*

This is a native of the eaſt. Rauwolff found it on mount Libanus; and Tournefort afterwards in Natolia. It is an annual plant, whoſe ſtalks riſe about two feet high, ſending out a few ſide branches, with linear multifid leaves, reſembling thoſe of Dill; the extremity of the ſtalk is terminated by a large umbel of white flowers.

[The fruit-bearing umbel converges; the involucre is many-leaved, the leaflets margined at the baſe, once or twice ternate at the tip; umbellules contracted, the florets of the diſk male, involucel two or three-leaved, halved, pinnatifid. Petals as in *Tordylium*[a]. Fruit orbicular, or ovate, compreſſed, pale, bay-coloured. Seeds ſlightly convex on one ſide, marked with five capillary longitudinal ſtreaks, having a membranaceous edge, divided into ten or twelve lobes; flattiſh on the other ſide, muricated with little ſcaly wrinkles, and having a riſing longitudinal line in the middle[b].

It flowers in july, and was introduced in 1788, by Monſ. Thouin[c].]

PROPAGATION AND CULTURE.

This plant decays as ſoon as the ſeeds are perfected, and many times in England before they are ripe; for unleſs they are ſown in autumn, and the plants come up before winter, they rarely produce good ſeeds here. They ſhould be ſown on a warm border, where the plants are to remain, for they will not bear tranſplanting. All the care they require, is to keep them clean from weeds, and to thin the plants to ſix or eight inches diſtance. [But to ſecure their ſeeding here, they ſhould be raiſed in a hot-bed, and kept in the greenhouſe.]

ARTEDIA muricata. See *Daucus*.

ARTEMISIA. (Ἀρτεμισια. *Hippocr. & Dioſc. from Artemiſia, wife of Mauſolus, king of Caria.* Or from Artemis, Diana.)
*Lin. gen. n.* 945. *Reich.* 1025. *Schreb.* 1281. *Tournef.* 260. *Vaill. act. gall.* 1719. *f.* 23, 31, 36, 45. *Juſſ.* 184. *Gærtn. t.* 164. Engl. *Mugwort.* Fr. *Armoiſe.*—Abrotanum. *Tournef.* Engl. *Southernwood.* Fr. *Aurone.*—Abſinthium. *Tournef.* 260. *Gærtn. t.* 164. *Vaill. f.* 32. Engl. *Wormwood.* Fr. *Abſinthe.*
Claſſ. 19. 2. Syngeneſia Polygamia Æqualis.
Nat. order of *Compoſitæ Nucamentaceæ. Corymbiferæ.* Juſſ.

GENERIC CHARACTER.

CAL. *Common* roundiſh, imbricate: *ſcales* rounded, converging.
COR. compound: *corollules* hermaphrodite, tubular, ſeveral, in the diſk. *Females* almoſt naked, in the circumference. *Proper of the hermaphrodite* funnel-ſhaped: *border* five-cleft.
STAM. in the hermaphrodites. *Filaments* capillary, very ſhort: *antlers* cylindric, tubular, five-toothed.
PIST. in the hermaphrodites. *Germ* ſmall: *ſtyle* filiform, the length of the ſtamens: *ſtigma* bifid, revolute.—*Females, germ* very ſmall: *ſtyle* filiform longer than in the hermaphrodites: *ſtigma* ſimilar.

[a] Juſſieu gen. [b] Gærtner. [c] Hort. kew.

PER. none. *Calyx* ſcarcely changed.
SEEDS ſolitary, naked.
REC. flat, naked, or villoſe.
OBS. Abſinthium T. *has a villoſe receptacle, and a more globular calyx.*—Abrotanum T. *and* Artemiſia T. *have a naked receptacle.*

ESSENTIAL CHARACTER.

*Recept.* ſubvilloſe, or almoſt naked. *Down* none. *Cal.* imbricate with rounded, converging, ſcales. *Cor.* of the ray none.

SPECIES.

* *Shrubby, erect.*

[1. Artemiſia vermiculata.
*Lin. ſyſt.* 743. *Reich.* 3. 737. *mant.* 281.
Abſinthium africanum arborescens, folio vermiculato incano. *Tournef. inſt.* 458.
Frutex cinereus muſcoſus. *Bryn. cent.* 24. *t.* 12.
*Leaves aceroſe, crowded, very ſmall; panicle racemed; flowers ſeſſile.*
2. Artemiſia capillaris.
*Lin. ſyſt.* 743. *Thunb. jap.* 309.
*Leaves ſimple, capillaceous.*
3. Artemiſia judaica.
*Lin. ſyſt.* 743. *Reich.* 3. 738. *mant.* 281. 111. *mat. med.* 183. *Stechm. artem.* 20. *Lour. cochinch.* 489?
Abſinthium halepenſe, &c. *Pluk. alm. t.* 73. *f.* 2.
*Leaves obovate, obtuſe, lobed, ſmall; flowers panicled, pedicled.*]
4. Artemiſia æthiopica.
*Lin. ſpec.* 1184. *ſyſt.* 743. *Reich.* 3. 738. *mant.* 283.
Abrotanoides africanum, &c. *Raii ſuppl.* 233. *n.* 14.
*Leaves palmate, linear, very minute; flowers racemed, pedunculed.*
[5. Artemiſia contra.
*Lin. ſyſt.* 743. *Reich.* 3. 738. *mant.* 282.
*Leaves palmate, linear, minute, panicled racemed, flowers ſeſſile.*]
6. Artemiſia Abrotanum. *Southern-wood.*
*Lin. ſpec.* 1185. *Reich.* 3. 739. *hort. cliff.* 403. *upſ.* 257. *mat. med. n.* 412. *p.* 183. *Gouan. monſp.* 432. *Scop. carn. n.* 1034. *p.* 144. *Allion. pedem. n.* 605. *Krock. ſileſ. n.* 1364. *Blackw. t.* 555. *Woodv.* 326. *t.* 119. *Stechm. artem.* 22. *Lour. cochinch.* 490.
Abrotanum vulgare. *Baub. hiſt.* 3. *p.* 192.
Abrot. mas. *Dod. pempt.* 21. *Ger.* 947. *f.* 2. *emac.* 1105. *f.* 2. *Raii hiſt.* 371.——vulgare. *Park. theat.* 92. *f.* 1.
*α.* Stem erect. *Common Southernwood.*
*β.* Abrot. humile. *Dwarf Southernwood.*
*Hort. par. Mill. dict. n.* 7. *fig. t.* 2. *f.* 1. *Tournef. inſt.* 459.
*Leaves ſetaceous, pinnatifid; ſtem decumbent, undershrubby.*
*Leaves ſetaceous, very branching.*
7. Artemiſia arborescens. *Common Narrow-leaved Tree Wormwood.*
*Lin. ſpec.* 1188. *Reich.* 3. 739. *Allion. pedem. n.* 611.
Abſinthium arborescens. *Lob. ic.* 753. *Park. theat.* 93. *f.* 3.
*Leaves tripinnatifid, ſilky, cinereous, leaflets linear, flowers globoſe; flower-bearing branchlets ſimple.*
[8. Artemiſia argentea. *Broad-leaved Tree Wormwood. L'Herit. ſert. angl. tab.* 28. *Ait. hort. kew.* 3. *p.* 170.
*Leaves bipinnatifid, ſilky, white: leaflets lanceolate-linear; flowers globoſe, flower-bearing branchlets wand-like.*
9. Artemiſia aragoniæ.
*D'Aſſo arag. n.* 811.
*Leaves linear, bipinnate, hoary: flowers racemed.*
10. Artemiſia Meſſerſchmidii.
*Stechm. p.* 19. *n.* 9.
*Leaves linear, multifid; racemes erect, ſlender, looſe.*
11. Artemiſia tatarica.
*Stechm. p.* 19. *n.* 10.
*Lower leaves bipinnate, pinnas equal; upper leaves pinnate, linear: racemes erect, looſe, many-flowered.*

12. Artemiſia nitroſa.
*Stechm. p. 24. n. 17. Gmel. ſib. 2. p. 113. n. 98. t. 50. f. 1.*
*Lower leaves finely multifid; upper entire, obtuſe: corymbs erect, hoary, oblong, ſpiked, ſeſſile.*
13. Artemiſia Lerchiana.
*Stechm. n. 18. Gmel. ſib. 2. n. 99. t. 50. f. 2. 3.*
β. *Gmel. ſib. n. 97. t. 49. f. 2.*
*Lower leaves pinnate, ſhort, finely divided, pinnas palmate; upper leaves linear, undivided: corymbs ſeſſile, very copious, ſpiked, oblong.*
14. Artemiſia tenella.
*Stechm. 20. Pluk. phyt. t. 1. f. 3.*
Abſinthium ſeriphium hiſpanicum. *Tournef. inſt. 458. Quer. ſi. Eſpan. 2. p. 143. 3.*
*Leaves ſhort, very finely multifid; panicles ſlender, looſe, leafy, pedunculs one or two-flowered.*
15. Artemiſia pauciflora.
*Stechm. n. 21. Gmel. ſib. 2. n. 101. t. 52. f. 1, 2.*
*Branches virgate; filiform: corymbs one-ranked, ſpiked, ſubſeſſile.*
16. Artemiſia italica.
*Stechm. n. 23. Hall. gott. p. 373. Zinn. cat. p. 398. Vaill. act. par. 1719. p. 287. 24. Pluk. phyt. t. 121. f. 2. Tournef. inſt. p. 459.*
*Leaves tomentoſe, looſely pinnate; pinnas long, linear; root-leaves dotted, ſpikes denſe: flowers erect.*
17. Artemiſia hiſpanica.
*Stechm. n. 24.*
*Leaves looſely pinnate; pinnas long, linear, ſpikes very denſe; calyxes oblong.*
18. Artemiſia Gmelini.
*Stechm. n. 27. Gmel. ſib. 2. n. 106. t. 56. f. 1.*
*Leaves doubly pinnate, obtuſe, linear; corymbs green, roundiſh, nodding.*
19. Artemiſia Lobelii.
*Allion. pedem. n. 607.*
A. camphorata. *Villars dauph. 242.*
Abrot. mas anguſtifolium minus. *Bauh. pin. 136. Raii hiſt. 371.*
Abrot. odoratum humile, denſe fruticoſum. *Lob. ic. 769. obſ. 444.*
*Leaves petiolate, palmate-multifid, linear; the upper ones ſimple, angular.*
** *Procumbent before flowering.*
20. Artemiſia ſantonica. *Tartarian Southernwood, or Worm-ſeed.*
*Lin. ſpec. 1185. ſyſt. 743. Reich. 3. 739. Stechm. artem. 25. Woodv. 335. t. 123.*
A. fruticoſa incana, &c. *Gmel. ſib. 2. p. 115. t. 51.*
Semen ſanctum. *Lob. ic. 756.*
Abſinthium ſantonicum alexandrinum. *Bauh. pin. 130. Raii hiſt. 368.*
β. Abſ. ſantonicum gallicum.
*Bauh. pin. 139. Camer. epit. 457.*
*Stem-leaves pinnate multifid, branches undivided, ſpikes one-ranked, reflex: flowers with five florets.*
21. Artemiſia campeſtris. *Field Southernwood.*
*Lin. ſpec. 1185. ſyſt. 743. Reich. 3. 740. hort. cliff. 403. β. ſuec. 732. Hudſ. angl. 357. With. 889. Gmel. ſib. 2. p. 117. Hall. helv. n. 131. Scop. carn. n. 1037. Pollich palat. n. 780. Krock. ſilef. n. 1365. Villars dauph. 247. Bauh. hiſt. 3. p. 194. 2. Stechm. artem. n. 26. Camer. epit. 597.*
Abrotanum campeſtre. *Bauh. pin. 136. Raii hiſt. 371. ſyn. 190. Garid. p. 2. t. 1. Ger. 948. 5. emac. 1106. 5. Park. 94. 7. Pet. brit. 20. 4.*
β. Abrot. camp. incanum Carlinæ odore.
*Bauh. pin. 136. Prodr. 71. Mill. ſig. t. 2. f. 2.*
*Leaves multifid, linear; ſtems procumbent, wand-like.*
[22. Artemiſia paluſtris. *Marſh Southernwood.*
*Lin. ſpec. 1185. Reich. 3. 740. Gmel. ſib. 2. p. 119. t. 55.*
Abſinthium. *Amm. ruth. 197.*
*Leaves linear, pinnate, quite entire; flowers glomerate, ſubſeſſile.*]
23. Artemiſia erithmifolia. *Sampire-leaved Southernwood.*
*Lin. ſpec. 1186. Reich. 3. 740.*
Abrot. hiſpanicum maritimum, &c. *Tournef. inſt. 459.*
Abrot. inodoratum, &c. *Mor. hiſt. 3. p. 11. Raii ſuppl. 232. n. 5.*
*Leaves compound, divaricate, linear, fleſhy, ſmooth; ſtem riſing, panicled.*
[24. Artemiſia valleſiaca. *Downy Southernwood.*
*Allion. pedem. n. 614. Ait. hort. kew. 3. 170. Hall. helv. n. 128.*
Artemiſia ſilaginoidea. *Stechm. n. 28.*
Art. Herba alba. *D'Aſſo Arrag. n. 810. t. 8. f. 1.*
Abſinthium Seriphium montanum candidum. *Bauh. pin. 139. Tournef. inſt. 458. Sebeuch. it. 4. 328. 1. 29. t. 3. f. 1.* (very bad.)
Abſ. valeſiacum tenuifolium candidum, ſeu, Herba alba. *Bauh. hiſt. 3. 179. Mor. hiſt. 3. p. 9.*
Abſ. album valeſianum. *Park. theat. p. 99. 8. Raii hiſt. 369.*
Herba alba. *Geſn. hort. 244.*
*Leaves pinnate, many-parted, filiform, tomentoſe; flowers ſeſſile, erect, ſubcolumnar, having few florets.*]
25. Artemiſia maritima. *Sea Wormwood.*
*Lin. ſpec. 1186. Reich. 3. 741. ſuec. n. 734. Hudſ. angl. 358. With. 890. Sauv. monſp. 264. Stechm. artem. 17. Woodv. 334. t. 122. Krock. ſilef. n. 1366.*
Abſinthium marinum album. *Ger. 940. 1. emac. 1099. 1. Raii hiſt. 370. ſyn. 188. Petiv. brit. t. 20. f. 2. Mor. hiſt. ſ. 6, t. 2. f. 19. 20.*
Abſ. ſeriphium belgicum. *Bauh. pin. 139. hiſt. 3. p. 178.*
α. Abſ. maritimum Seriphio belgico ſimile, latiore folio, odoris grati. *Pluk. Raii ſyn. n. 3. Petiv. t. 20. f. 3.*
β. Abſ. Seriphium gallicum—item, germanicum.
*Bauh. pin. 139. Raii ſyn. n. 4. Lin. ſpec. β. ſyſt. γ.*
γ. Abſ. Seriphium tenuifolium marinum narbonenſe.
*Bauh. hiſt. 3. 177. Raii ſyn. n. 5.*
δ. Abſ. maritimum noſtras. *Raii ſuppl. 231. ſyn. n. 6.*
*Leaves many-parted, tomentoſe; racemes drooping, female florets three.*
26. Artemiſia glacialis. *Silky Wormwood.*
*Lin. ſpec. 1187. ſyſt. 743. Reich. 3. 741. Jacqu. auſtr. 5. app. t. 35. Allion. pedem. n. 617. t. 8. f. 3. and t. 9. f. 1. Villars dauph. 243.*
Abſinthium. *Hall. helv. n. 125. Raii ſuppl. 231. 8. Bauh. pin. 139. 3. prodr. 71. 3.*
*Leaves palmate, multifid, ſilky; ſtems aſcending; flowers glomerate, level-topped.*
27. Artemiſia rupeſtris. *Creeping Wormwood.*
*Lin. ſpec. 1186. Reich. 3. 741. ſuec. n. 733. Fl. dan. t. 801. Allioni pedem. n. 615. Gmel. ſib. 2. p. 111. t. 49. f. 1. Scop. carn. n. 1038. Stechm. artem. n. 9. Krock. ſilef. n. 1367.*
α. Muttellina. *Villars dauph. 244.*
Apſinthium. *Hall. helv. n. 126.*
α. Abſ. viride, foliis multifidis linearibus. *Gmel. ſib. 2. t. 64. f. 2.*
*Leaves pinnate, ſtems aſcending; flowers globoſe, nodding, receptacle pappoſe.*
[28. Artemiſia ſpicata. *Spiked Wormwood.*
*Lin. ſyſt. 744. Jacq. β. auſtr. 5. app. t. 34. Hall. helv. n. 127. Allion. pedem. n. 616. t. 8. f. 1. Stechm. p. 17. Villars dauph. 246. Boce. muſ. t. 71.*
*Root-leaves biternate, ſtem aſcending, ſpiked, flowers erect.*
*** *Erect, herbaceous, with compound leaves.*
29. Artemiſia anethifolia. *Dill-leaved Wormwood.*
*Stechm. n. 25. Gmel. ſib. 2. n. 103. t. 54.*
*Leaves multifid, very ſlenderly divided; corymbs roundiſh, nodding, one-ranked, looſely ſpiked.*]
30. Artemiſia pontica. *Roman Wormwood.*
*Lin. ſpec. 1187. Reich. 3. 742. hort. cliff. 404. upſ. 257. mat. med. 184. Jacqu. auſtr. 1. t. 99. Hall. helv. n. 129. Pollich pal. n. 781. Stechm. artem. p. 31. Krock. ſilef. n. 1368.*
Abſinthium ponticum tenuifolium incanum. *Bauh. pin. 138. Dod. pempt. 24. Raii hiſt. 367. n. 5.*
*Leaves many-parted, tomentoſe beneath; flowers roundiſh, nodding; receptacle naked.*

[31. Artemiſia

[31. Artemisia austriaca. *Austrian Wormwood.*
*Lin. syst.* 744. *Jacqu. austr.* 1. *t.* 100.
*Leaves many-parted, tomentose, hoary; flowers oblong, nodding, receptacles naked.*]

32. Artemisia annua. *Annual Wormwood.*
*Lin. spec.* 1187. *Reich.* 3. 743. *hort. upsal.* 257. *Gmel. sib.* 2. *p.* 125. *n.* 108. *Amm. ruth.* 142. *n.* 193. *t.* 23. *Lour. cochinch.* 490.

β. Absinthium folio tenui multifido, camphoram spirans. *Boerh. lugdb.* 1. *p.* 126.
*Leaves three-fold pinnate, smooth on both sides, flowers sub-globose, nodding; receptacle smooth, conical.*

33. Artemisia tanacetifolia. *Tansy-leaved Wormwood.*
*Lin. spec.* 1188. *Reich.* 3. 743. *Stechm. artem. n.* 12. *Allion. pedem. n.* 608. *t.* 70. *f.* 2. *and t.* 10. *f.* 3. *Gmel. sib.* 2. *p.* 122. *t.* 58. *Villars dauph.* 248.
*Leaves bipinnate, underneath tomentose shining; pinnas transverse, racemes simple.*

34. Artemisia Absinthium. *Common Wormwood.*
*Lin. spec.* 1188. *Reich.* 3. 743. *hort. cliff.* 404. *fl. suec. n.* 735. *mat. med.* 184. *Gærtn. fruct.* 2. 393. *Hudf. angl.* 358. *With.* 890. *Allion. pedem. n.* 610. *Scop. carn. n.* 1035. *Leers herb. n.* 636. *Stechm.* 14. *Woodv.* 328. *t.* 120. *Krock. silef. n.* 1369. *Villars dauph.* 241.
Apsinthium. *Hall. helv. n.* 124.
Absinthium ponticum. s. romanum, &c. *Baub. pin.* 138. *Blackw. t.* 17.
Abs. vulgare majus. *Baub. hist.* 3. 168. *Mor. hist. s.* 6. *t.* 1. *f.* 1. *row.* 3.
Abs. vulgare. *Park.* 98. 1. *Raii hist.* 366. *syn.* 188.
A. latifolium, seu ponticum. *Ger.* 937. 1, 2. *emac.* 1096. 1.
β. A. inodora. *Mill. dict. n.* 16.—insipida. *Villars dauph.* 249.
Abs. insipidum. *Baub. pin.* 139. *n.* 7. *Ger.* 943. 4. *emac.* 1102. 3. *Park. theat.* 98. *n.* 5.
*Leaves compound, multifid: flowers subglobose, pendulous; receptacle villose.*

35. Artemisia vulgaris. *Mug-wort.*
*Lin. spec.* 1188. *Reich.* 3. 744. *mat. med.* 184. *fl. suec. n.* 731. *lapp. n.* 297. *Hudf. angl.* 359. *With.* 891. *Lichtf. scot.* 468. *Allion. pedem. n.* 609. *Hall. helv. n.* 130. *Scop. carn. n.* 1033. *Pollich pal. n.* 782. *Krock. silef. n.* 1370. *Villars dauph.* 248. *Stechm. artem.* 32. *Woodv.* 331. *t.* 121. *Lour. cochinch.* 491. *Thunb. jap.* 310.
Art. vulgaris. *Baub. hist.* 3. 184. 3. *Raii hist.* 372. *syn.* 190. *Park.* 90 & 91. 2.
A. vulg. major. *Baub. pin.* 137.
A. mater herbarum. *Ger.* 945. 1. 2. *emac.* 1103. 1.
A. latifolia vulgaris major. *Mor. hist. s.* 6. *t.* 1. *f.* 1. *row* 2.
*Leaves pinnatifid, flat, gashed, tomentose underneath: racemes simple, recurved; ray five-flowered.*

[36. Artemisia pectinata.
*Lin. syst.* 742. *suppl. p.* 362. *Pallas itin.* 3. *p.* 755. *t. H. b. f.* 2.
*Leaves pinnate, pectinate, smooth, sessile; flowers axillary, solitary, sessile, having four florets.*]

**** *Leaves simple.*

37. Artemisia integrifolia. *Entire-leaved Mugwort.*
*Lin. spec.* 1189. *Reich.* 3. 744. *Gmel. sib.* 2. *p.* 109. *t.* 48. *f.* 1.
*Leaves lanceolate, tomentose underneath, quite entire or with one or two teeth; female florets five.*

[38. Artemisia japonica. *Japonese Mugwort.*
*Lin. syst.* 744. *Thunb. jap.* 310. *Kæmpf. amæn.* 5. *p.* 897.
*Leaves smooth; those on the branches lanceolate and entire, on the stem oblong and trifid; flowers racemed nodding.*]

39. Artemisia cærulescens. *Lavender-leaved Wormwood.*
*Lin. spec.* 1189. *Reich.* 3. 745. *hort. cliff.* 403. *Hudf. angl.* 359. *With.* 892. *Scop. carn. n.* 1036. *Stechm. artem.* 36. *Gmel. sib.* 2. 131. *t.* 64. *f.* 1.
Abs. maritimum lavandulæ folio. *Baub. pin.* 139. *Mor. hist. s.* 6. *t.* 1. *f.* 5. *Raii hist.* 370. *Dub. arb.* 1. *t.* 24. *f.* 5.
A. marina. *Ger.* 946. *emac.* 1104. 3.
Abs. angustifolium. *Dod. pempt.* 26. 2.
Abrotanum latifolium rarius, artemisiæ folio. *Col. ecphr.* 2. *p.* 75. *t.* 76.
*Stem-leaves lanceolate, entire; root-leaves multifid; female florets three.*

40. Artemisia Dracunculus. *Tarragon.*
*Lin. spec.* 1189. *Reich.* 3. 745. *hort. cliff.* 403. *upsal.* 256. *Gmel. sib.* 2. *p.* 126. *t.* 59 *and* 60. *f.* 1. *Scop. carn. n.* 1032. *Krock. silef. n.* 1371. *Stechm. artem.* 37. *Gron. orient.* 106.
Dracunculus hortensis. *Baub. pin.* 98. *Blackw. t.* 116.
Draco herba. *Dod. pempt.* 709. *Ger.* 193. *emac.* 249. *Park. parad.* 500. *Raii hist.* 373.
*Leaves lanceolate, smooth, quite entire.*

[41. Artemisia chinensis. *Chinese Mugwort.*
*Lin. spec.* 1190. *Reich.* 3. 745. *Gmel. sib.* 2. *p.* 61. *f.* 1. 2. *Lour. cochinch.* 492.
Abs. maritimum Sinarum, &c. *Pluk. amalth.* 3. *t.* 153. *f.* 5.
*Leaves simple, tomentose, obtuse, lanceolate; the lower ones wedge-shaped, three-lobed.*

42. Artemisia maderaspatana. *Madras Wormwood.*
*Lin. spec.* 1190. *Reich.* 3. 746.
Tanacetum ægyptiacum. *Jacq. hort.* 3. *p.* 46. *t.* 88.
Absinthium maderasp. &c. *Pluk. amalth.* 3. *t.* 357. *f.* 3.
Abs. gangeticum, &c. *Pluk. alm.* 2. *t.* 1. *f.* 2. (bad.)
Nelampala. *Rheed. mal.* 10. *p.* 97. *t.* 49.
*Leaves simple, lyrate-sinuate; stems procumbent; flowers pedunculate, solitary, globose, opposite to the leaves.*]

43. Artemisia minima. *Least Wormwood.*
*Lin. spec.* 1190. *syst.* 745. *Reich.* 3. 746. *Burm. ind.* 1. *t.* 58. *f.* 3. *Thunb. jap.* 311.
Centipeda orbicularis. *Lour. cochinch.* 493.
*Leaves wedge-shaped, repand, stem procumbent, flowers axillary, sessile.*

[44. Artemisia littoralis.
*Retz. obs.* 5. 28. *n.* 77.
*Procumbent, strigose; leaves spatulate ferrate-toothed, calyxes naked, pedicelled.*

DESCRIPTIONS, &c.

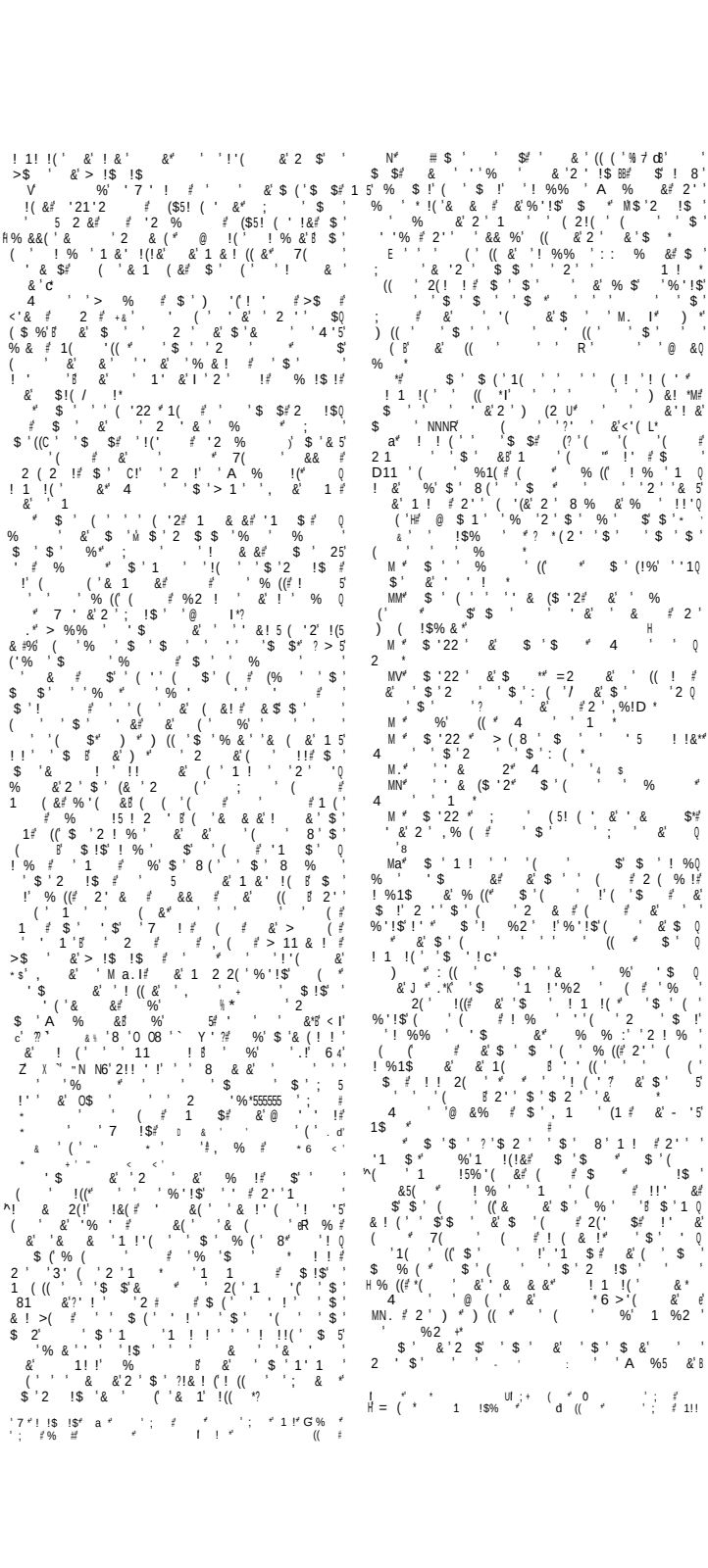
The plants of this genus are either undershrubs or herbs. The leaves are usually multifid, in some species hoary. The flowers are commonly disposed in panicles [a].

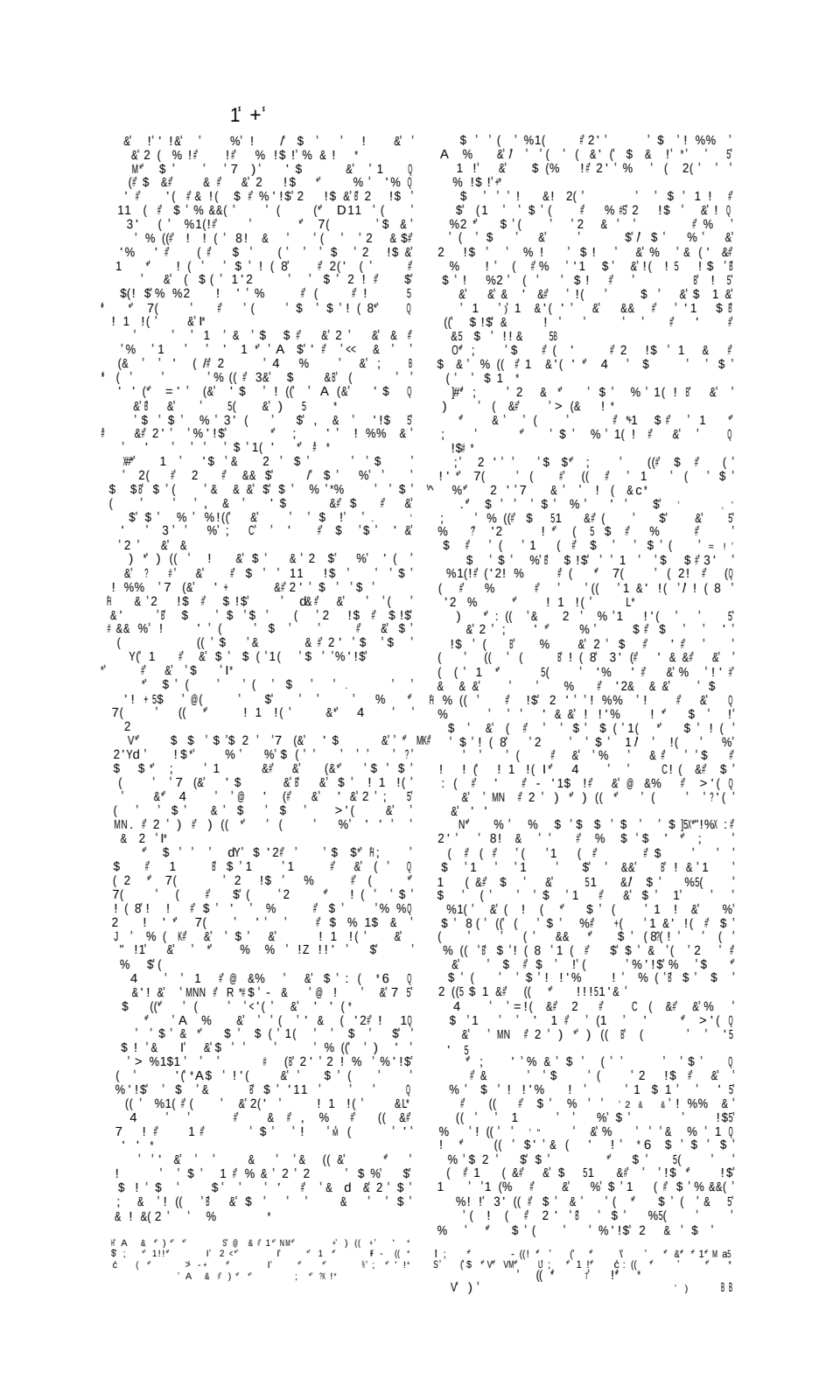
1. This is a stiff, upright shrub, inclining to ash-colour, and panicled. Leaves linear, tomentose and flat on the upper surface, naked and rather convex beneath. Panicle very copious, consisting of racemes, which are formed of sessile, ovate, imbricate spicules. Flowers tomentose, with the lowest scale naked. Native of the Cape of Good Hope [b].

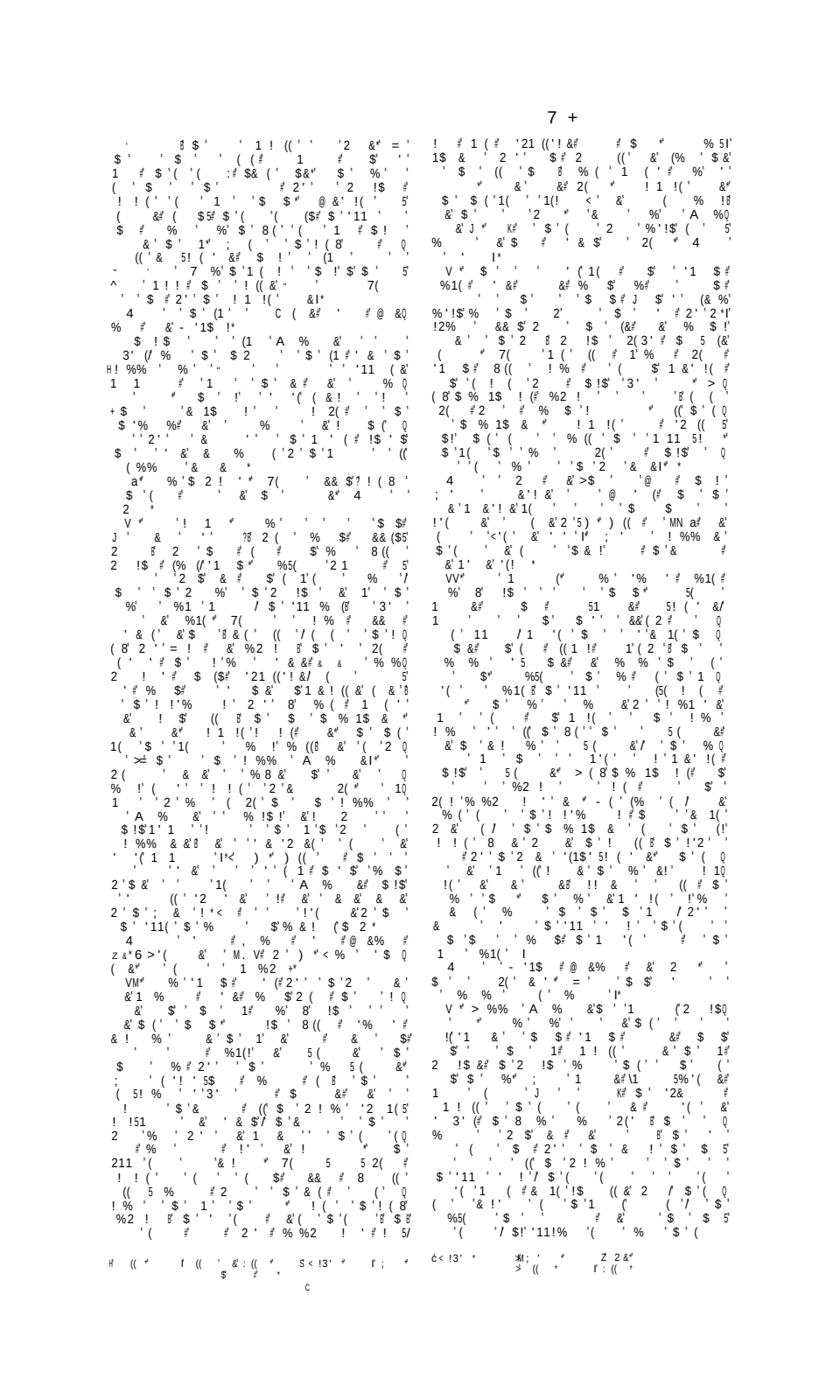
2. Stem striated, reddish, smooth, branching a foot or more in height. Branches scattered, subfastigiate, from upright spreading, like the stem. Leaves frequent, smooth, half an inch long. Flowers in close racemes on the extreme twigs. Native of Japan, where it flowers in october [c].

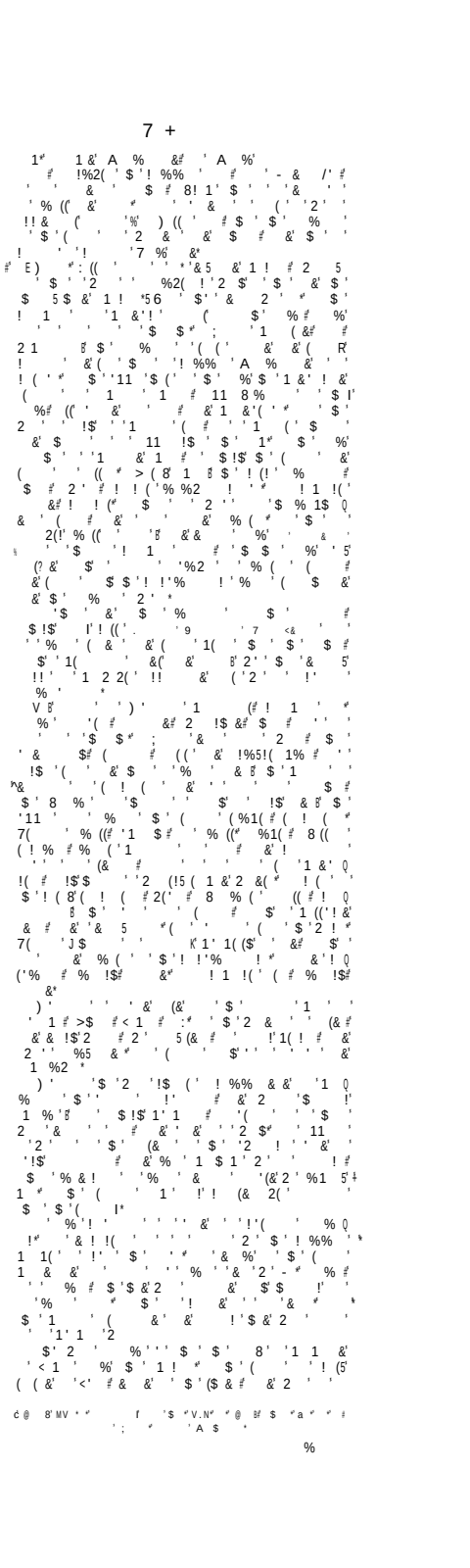
Loureiro has a species which he names *Artemisia agnatica*, because it delights in the water, and will grow many years and flower in a vessel filled with water, without any earth. He suspects that it may be the same with this species of Thunberg; and thus describes it. Stem arborescent, twisted, knotty, eight feet high, about the thickness of the human leg: branches distorted, spreading, smooth; twigs, petioles and peduncles reddish-brown. Leaves scattered, roundish, deeply many-parted, with the segments capillary, slender, smooth on both sides, dark green, inodorous. Flowers white, very small, globular, on long, terminating racemes, ending in linear spikes. All the florets are tubulose. Re-

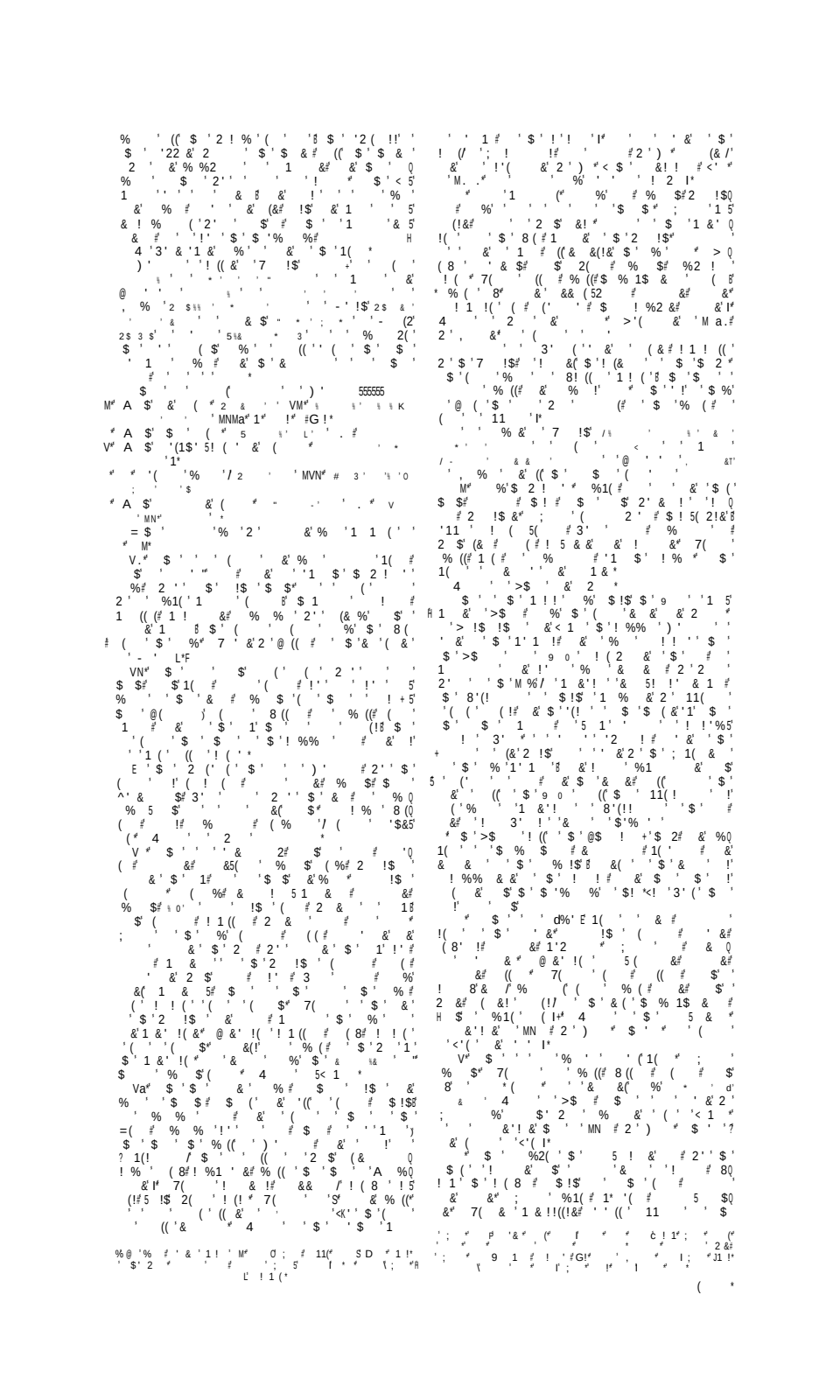
[a] Jussieu. [b] Linn. mant. [c] Thunberg.

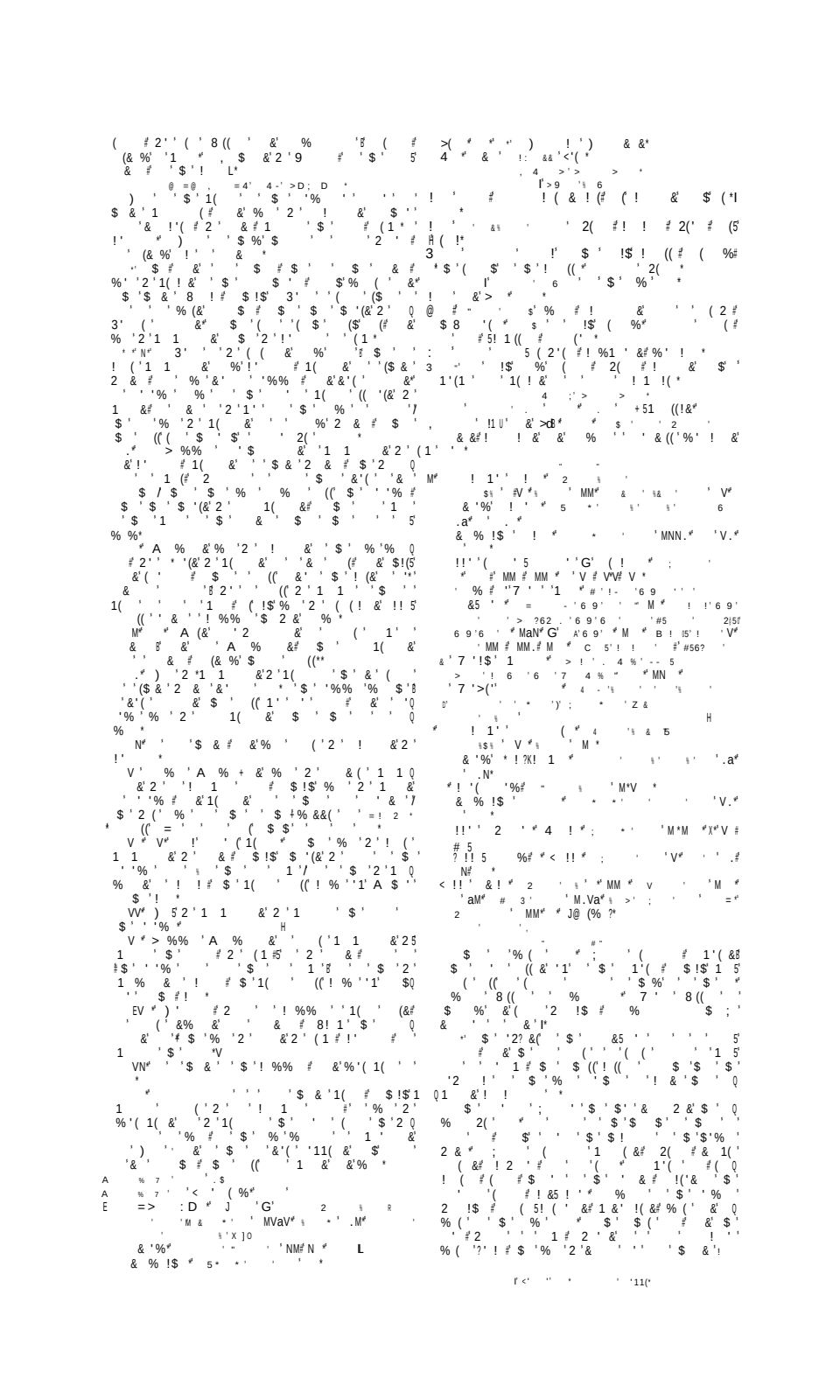


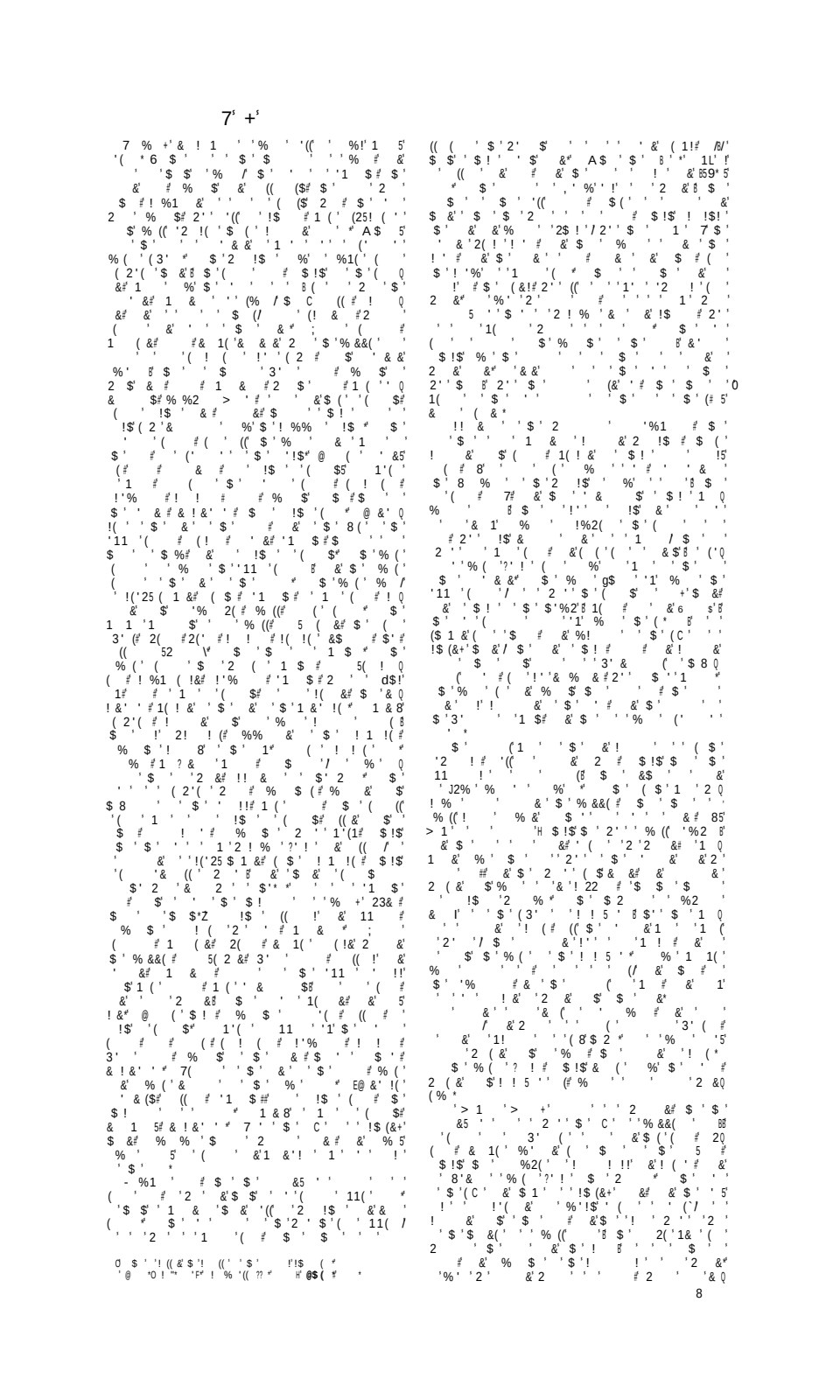


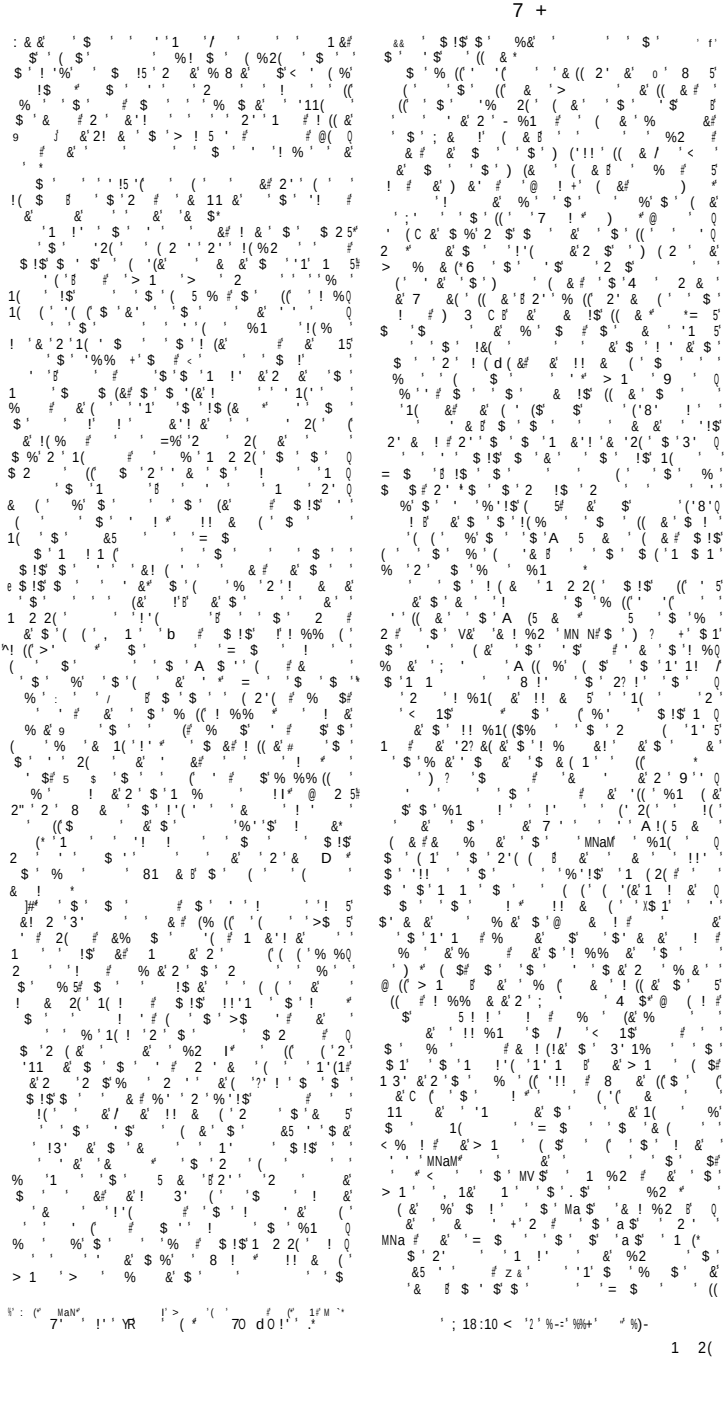


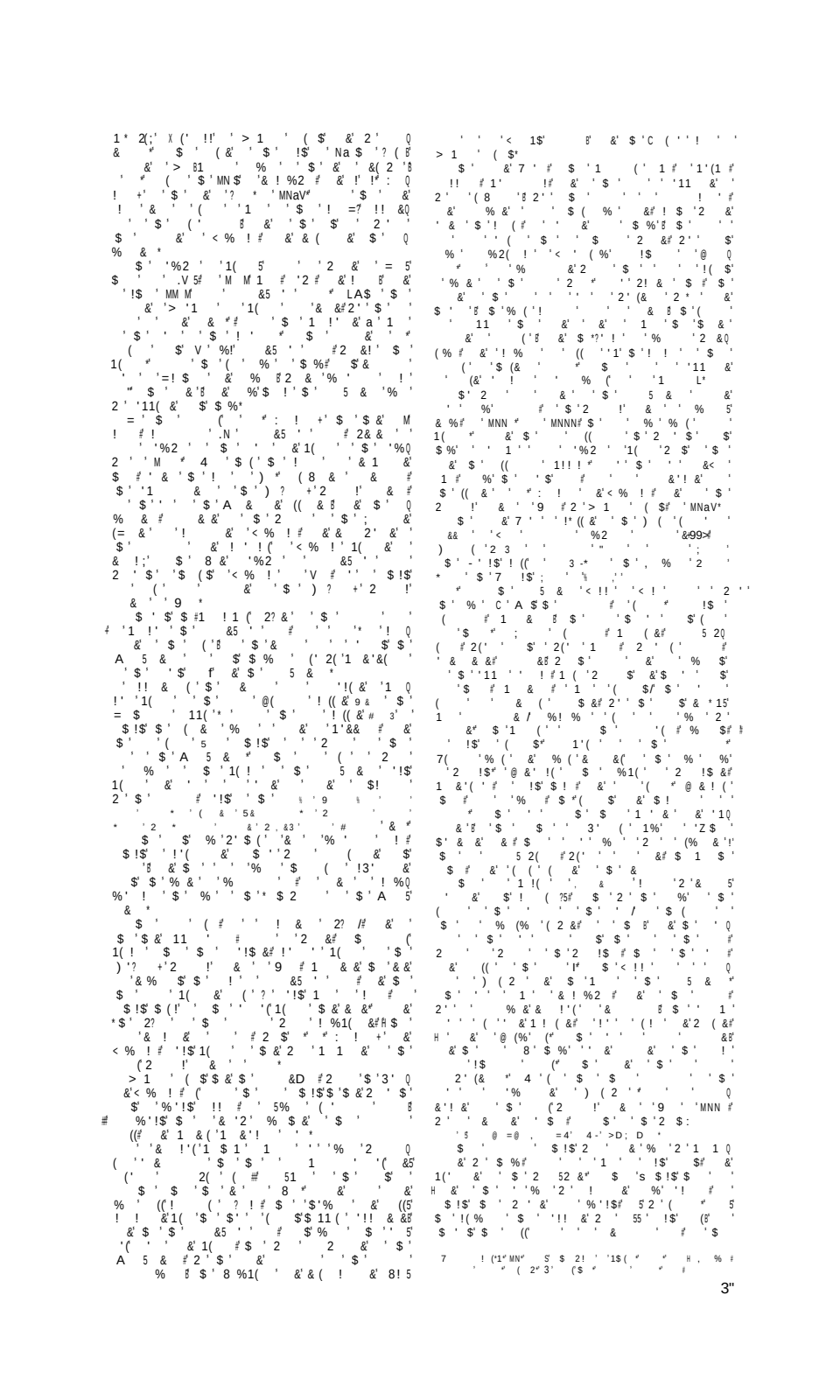












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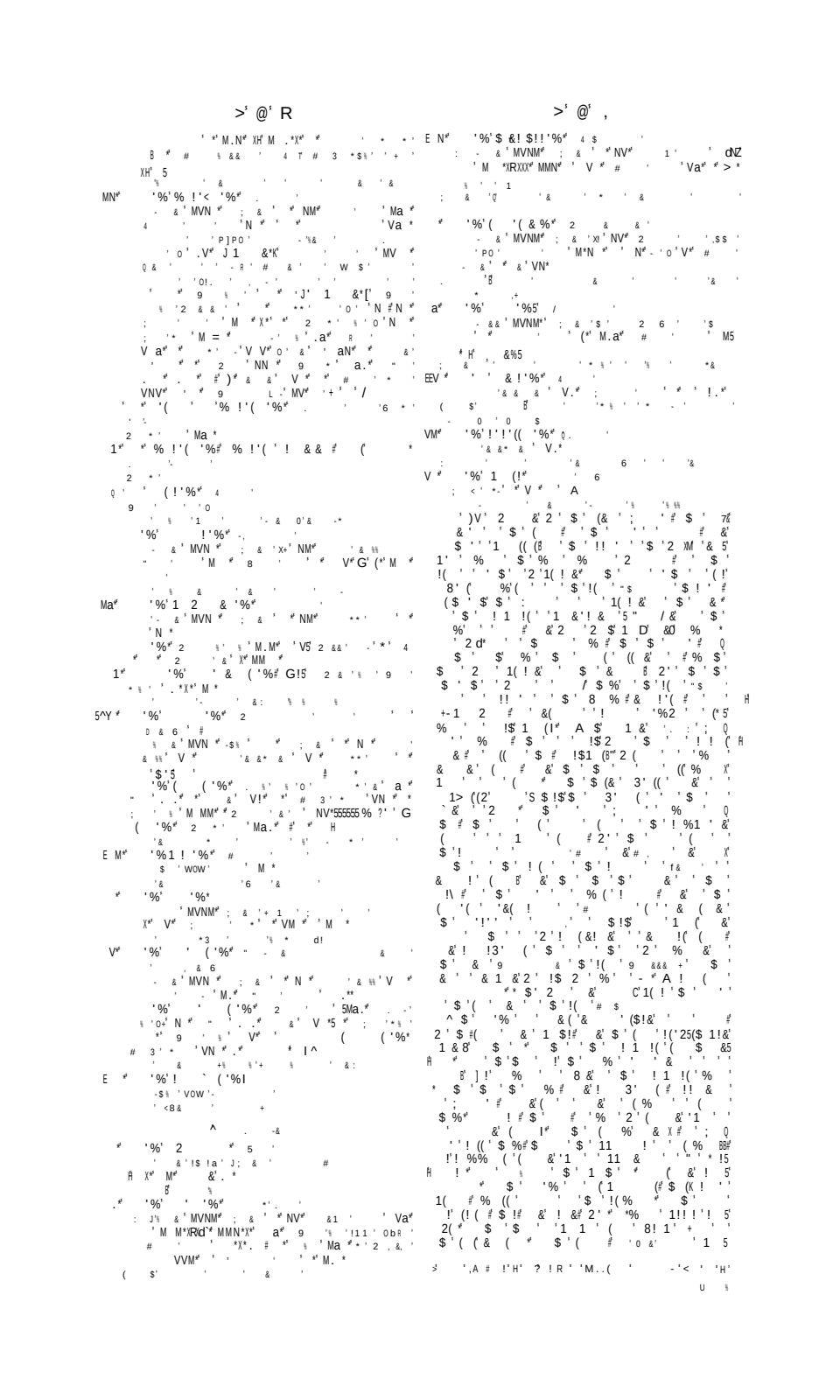

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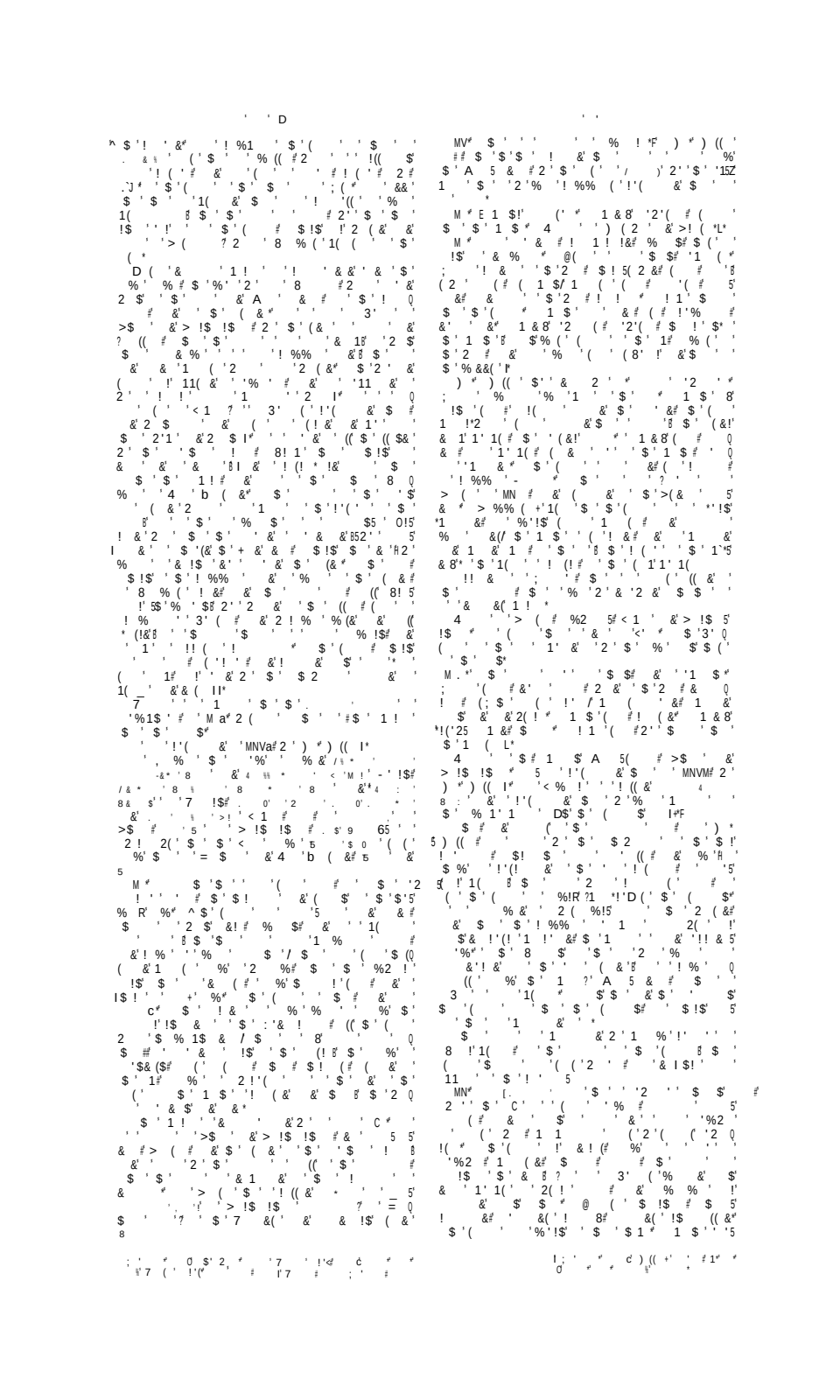

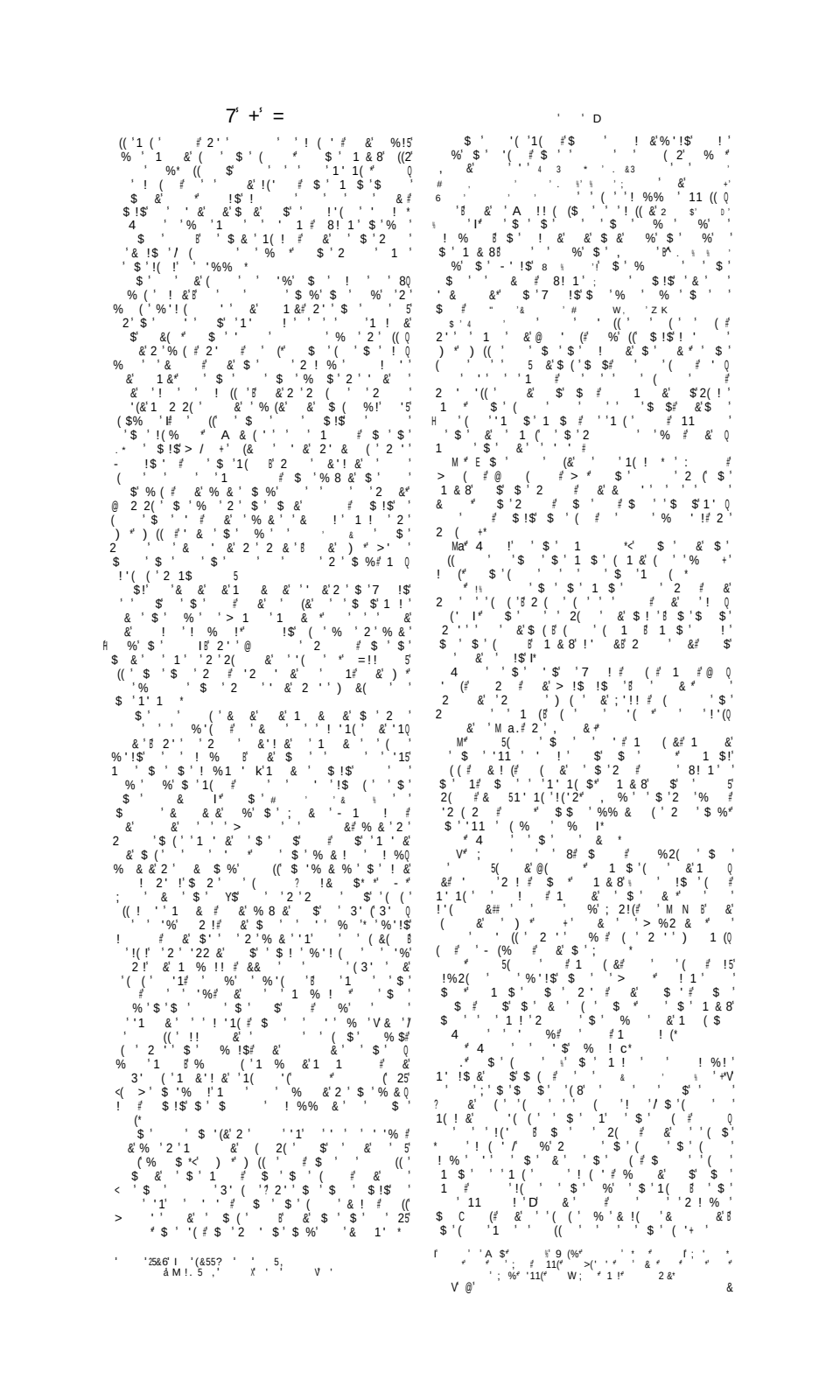

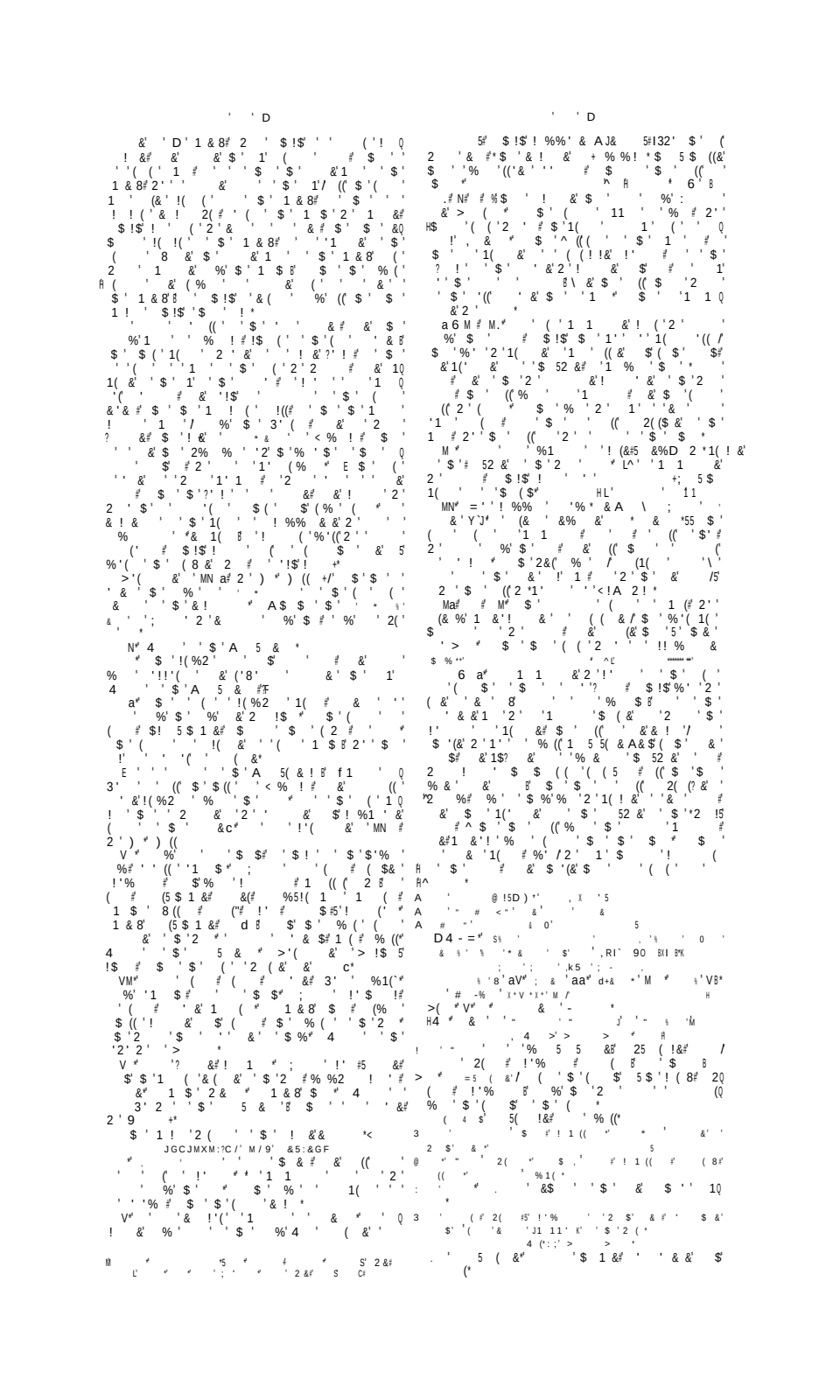

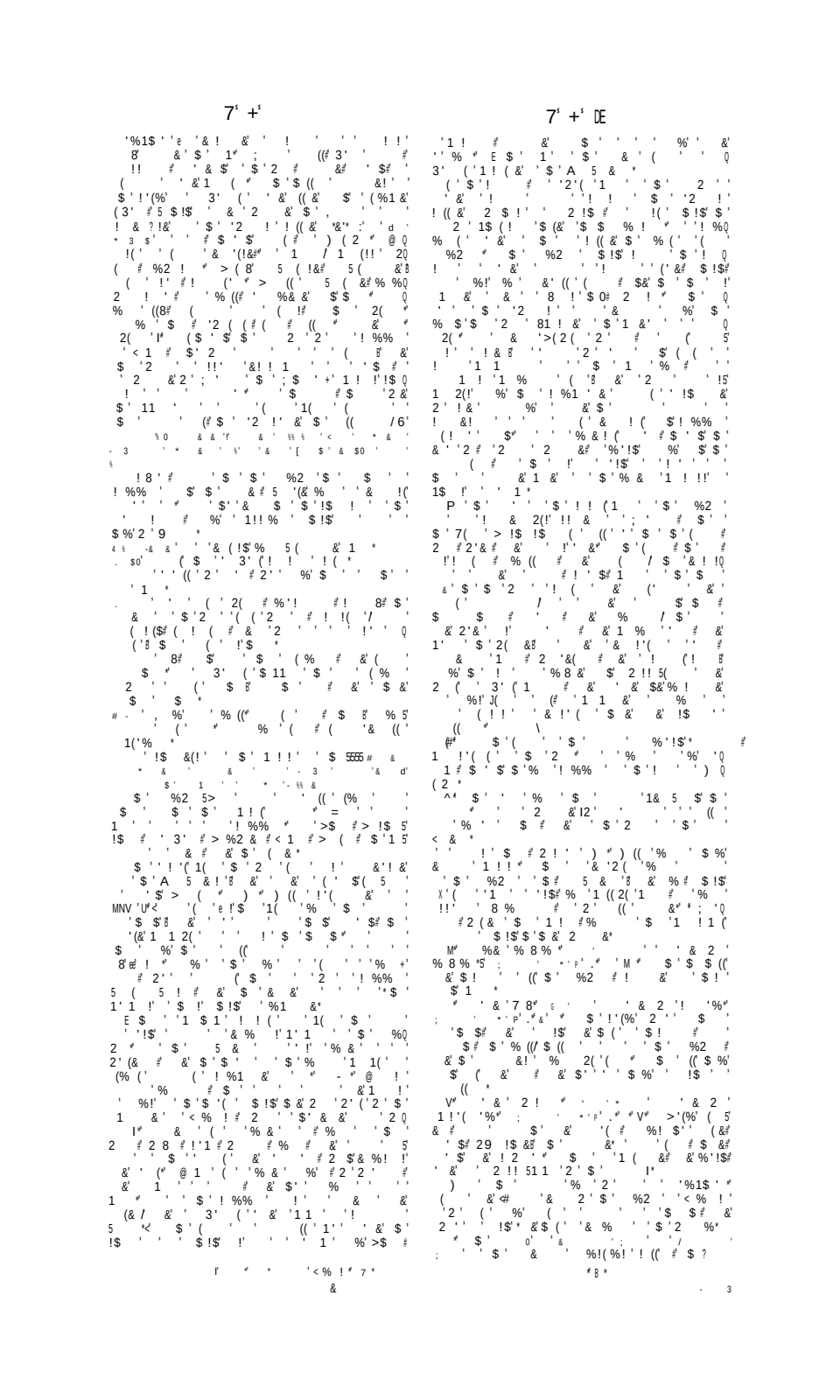

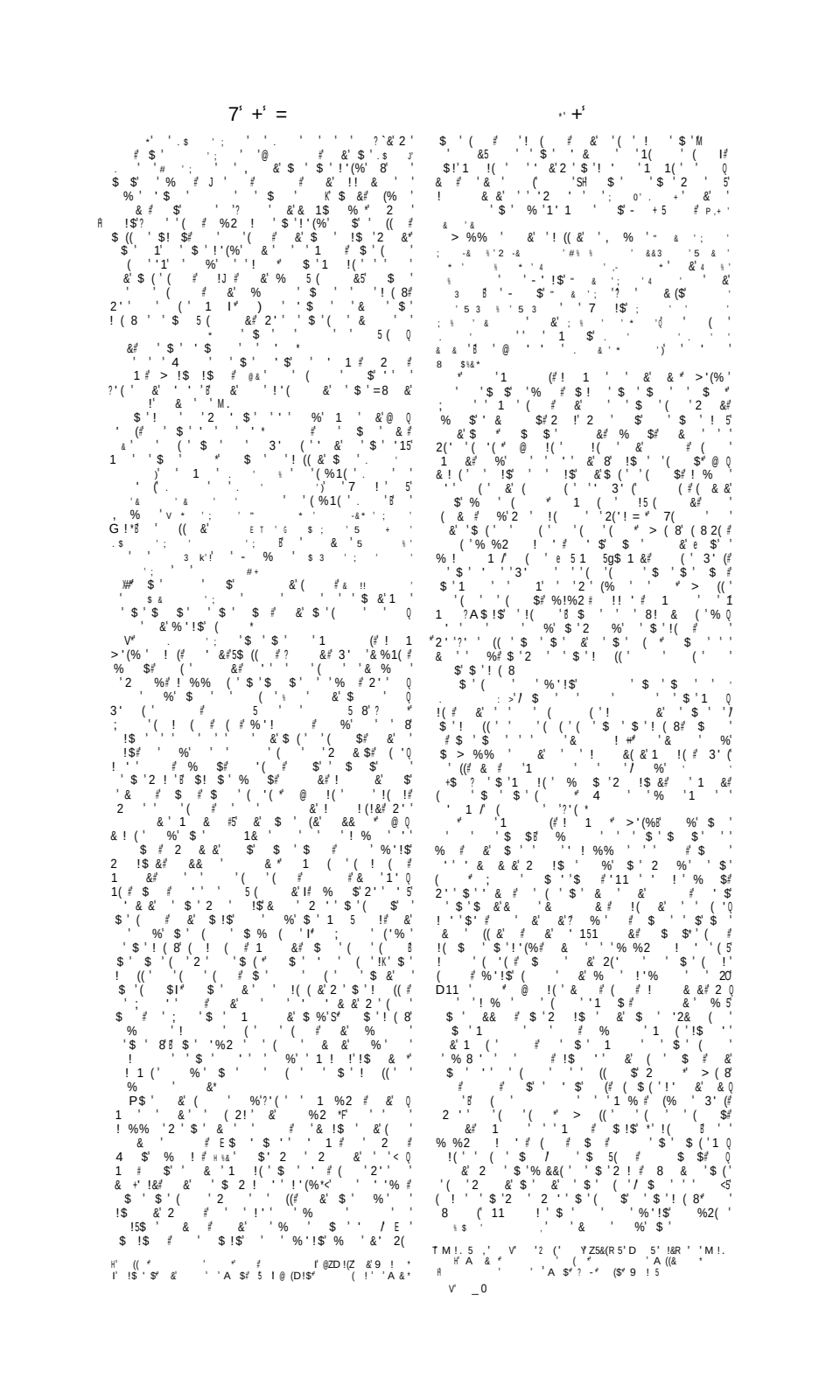

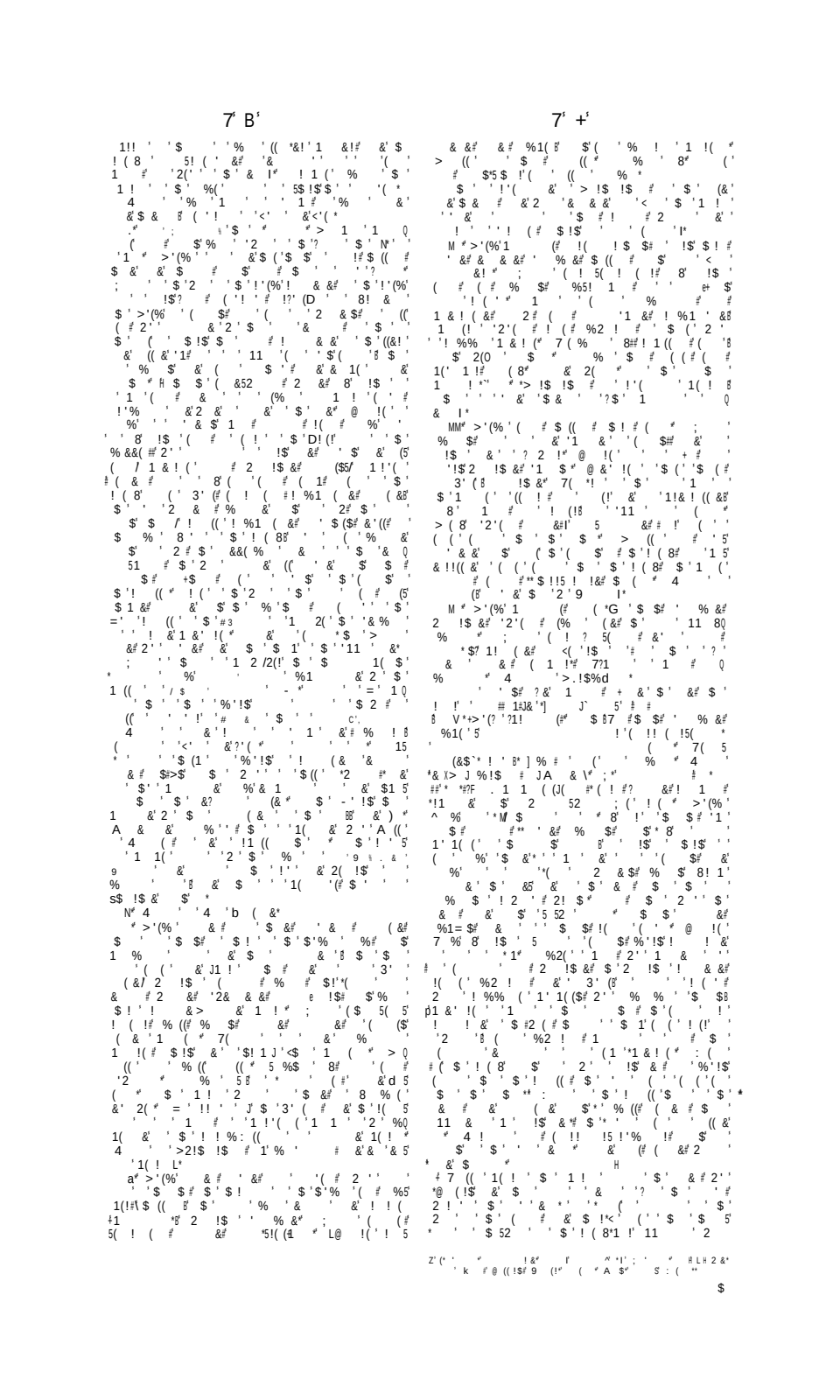

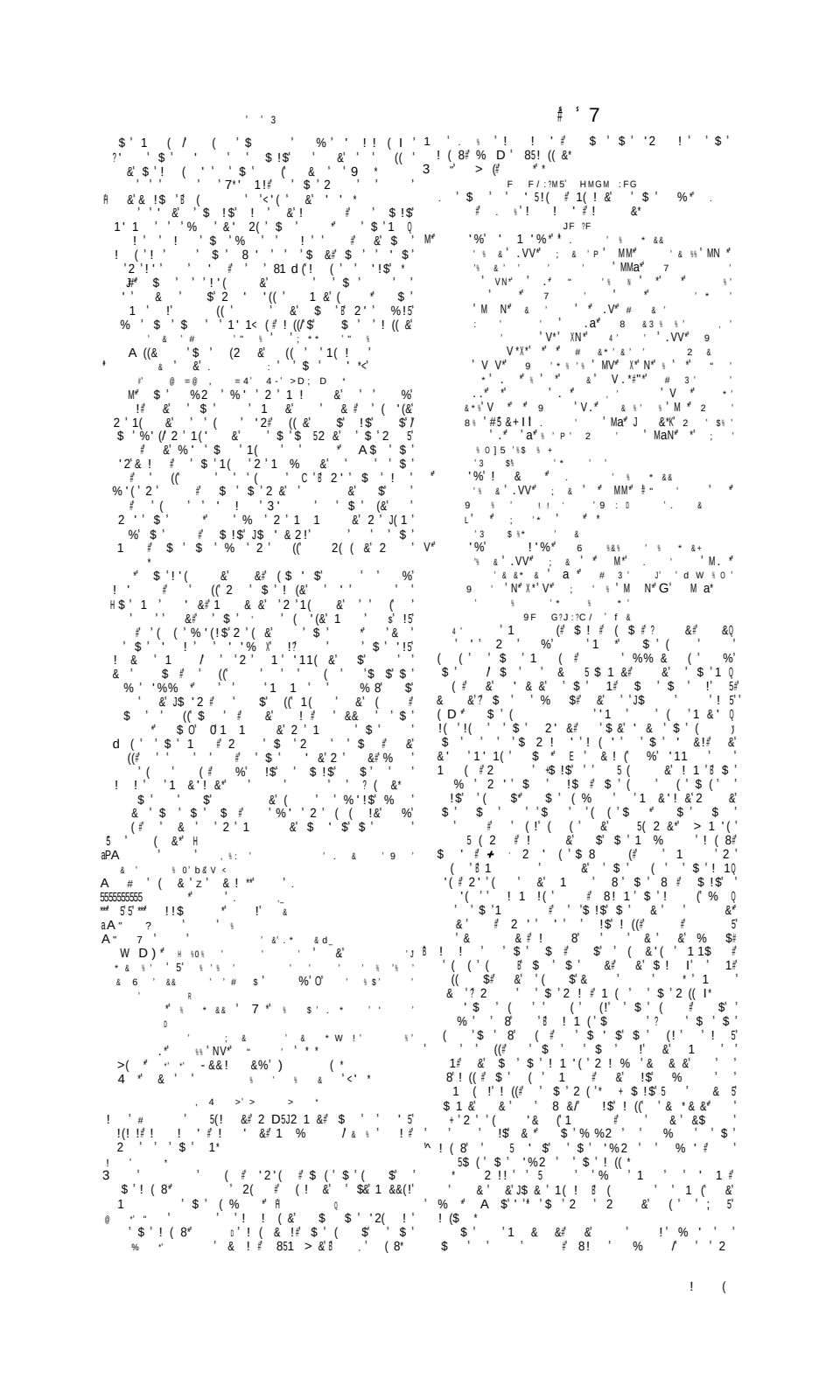

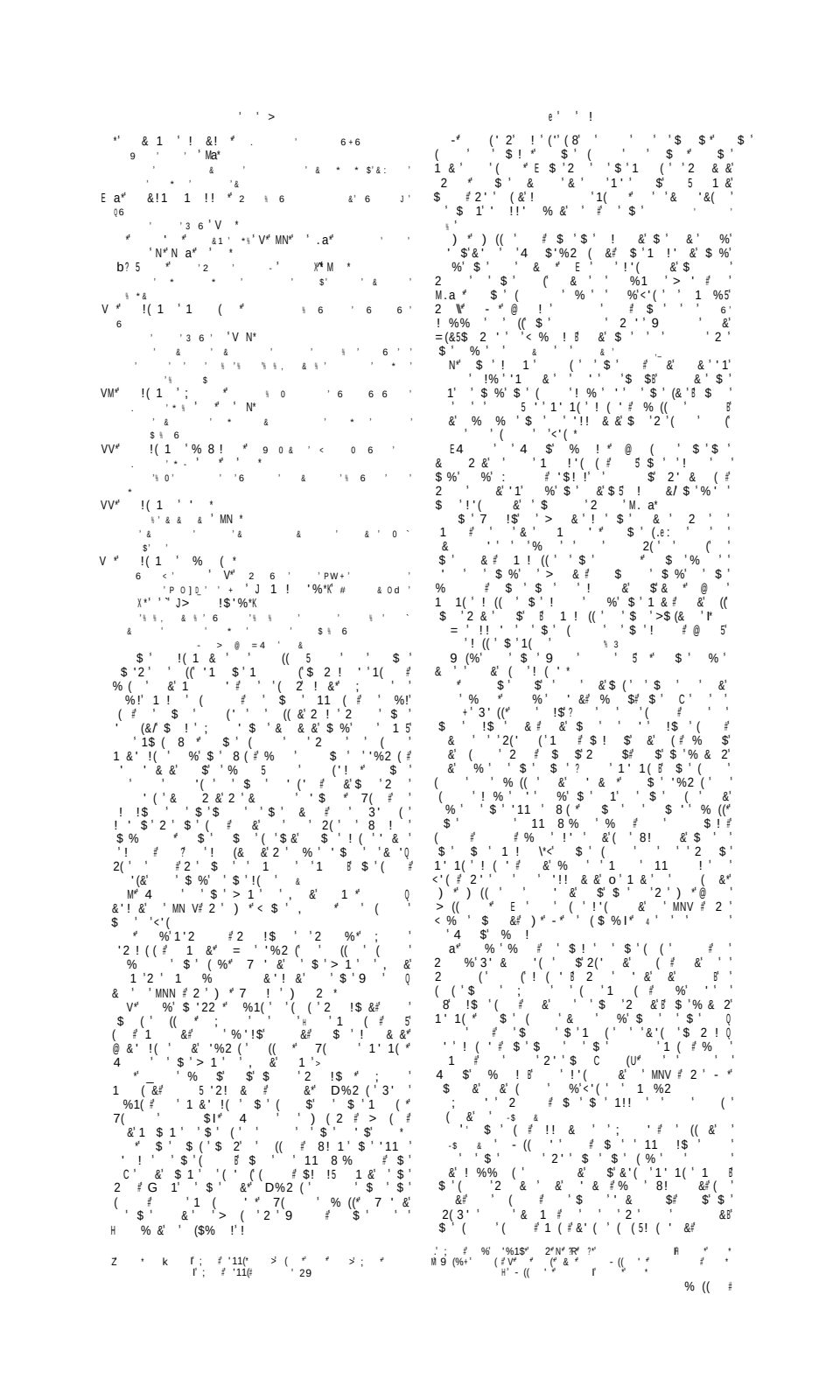

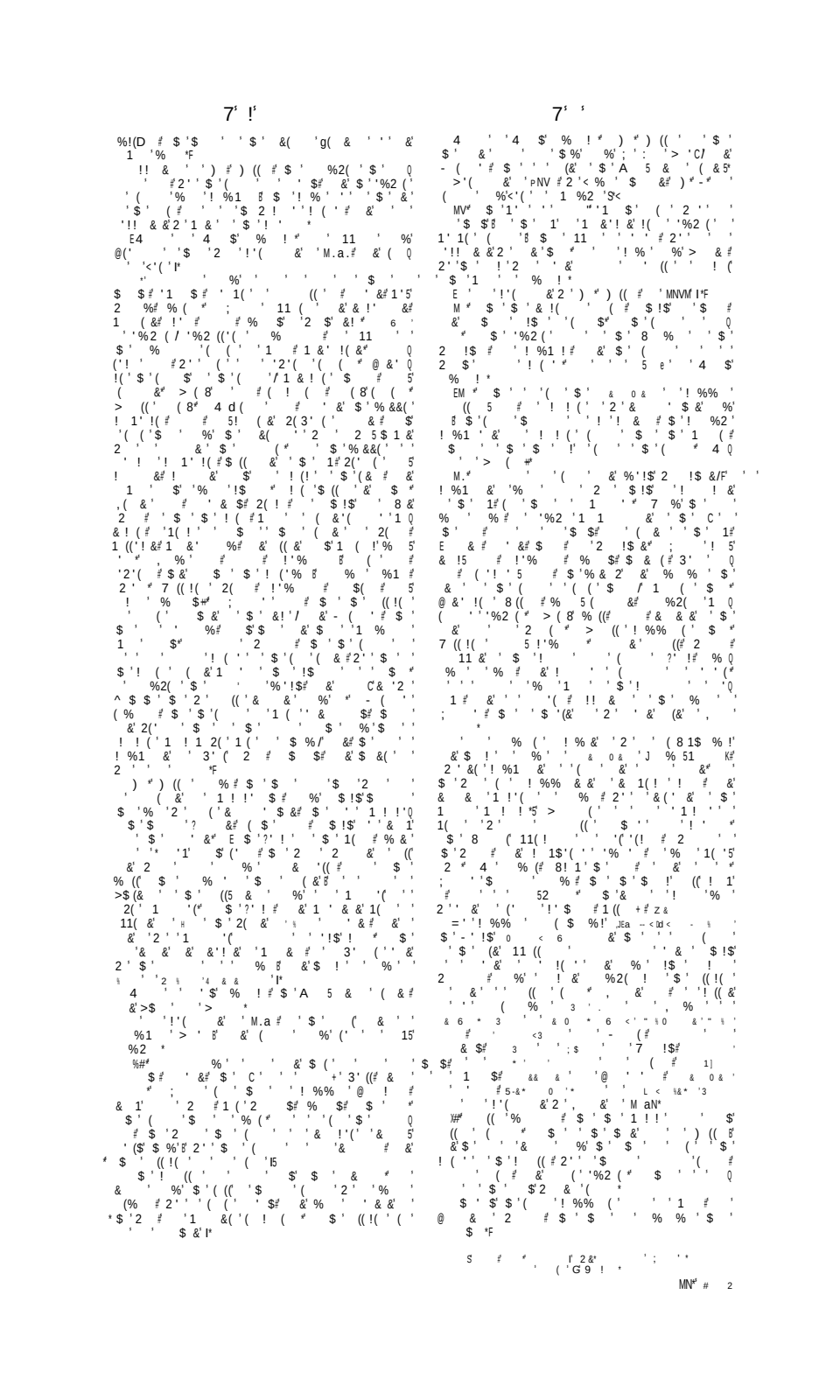

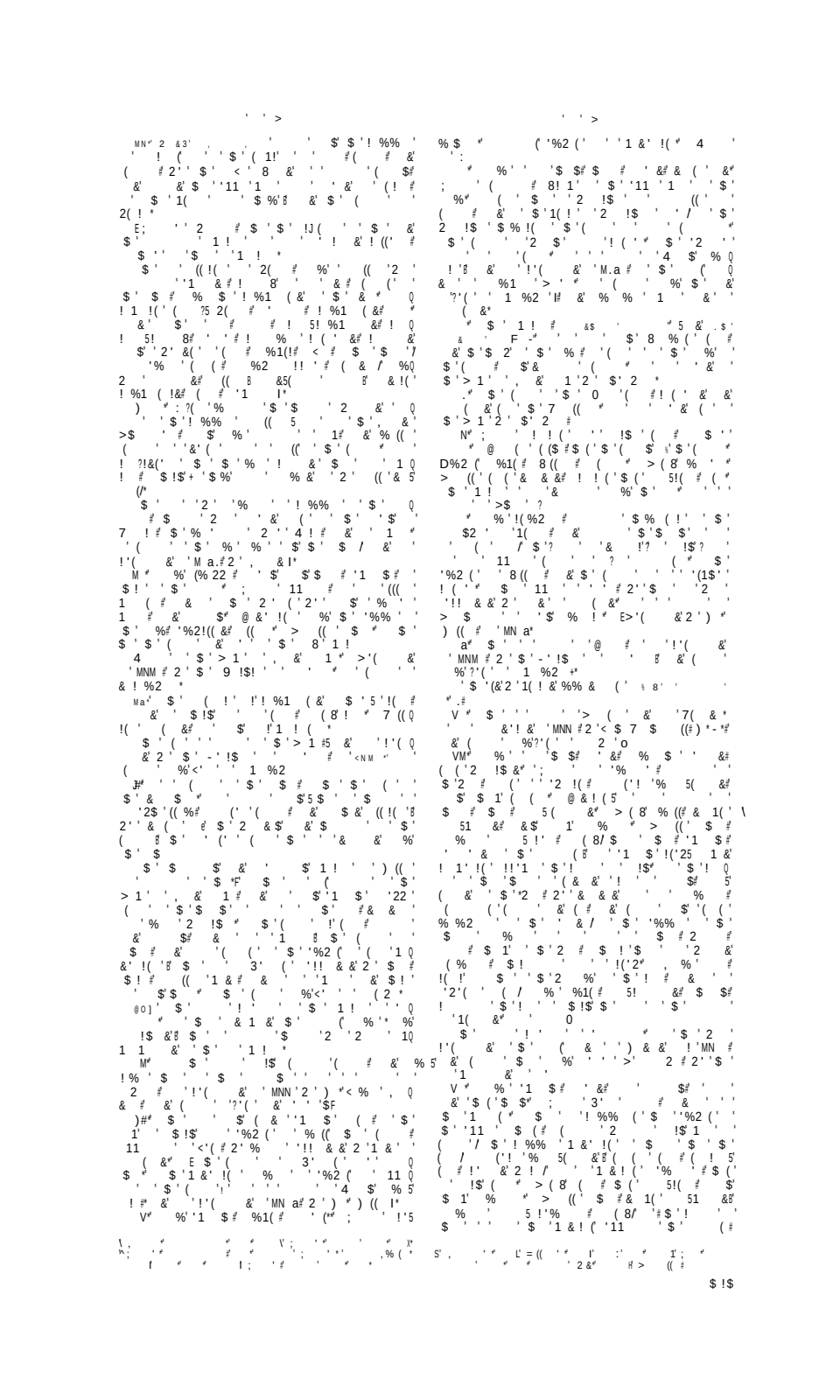

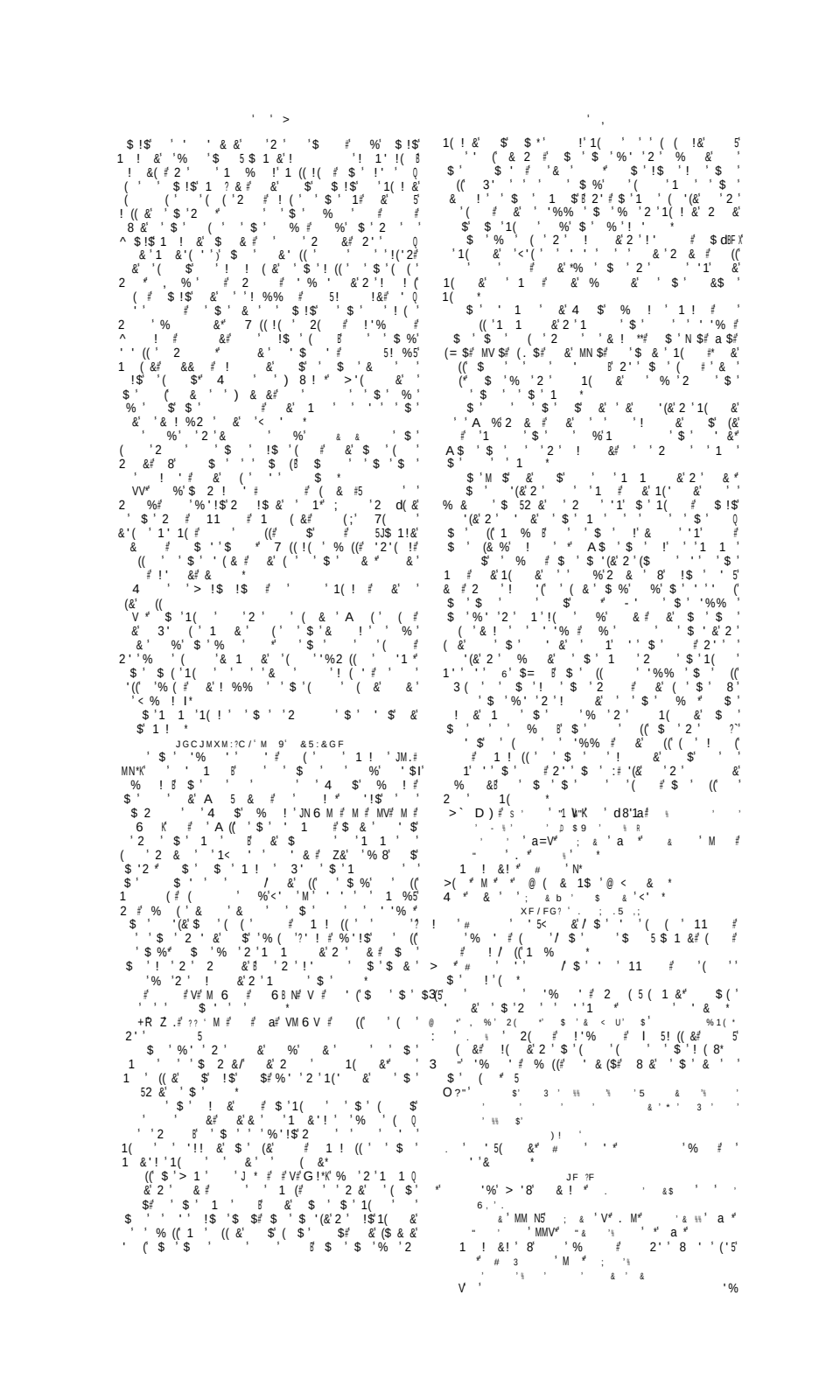

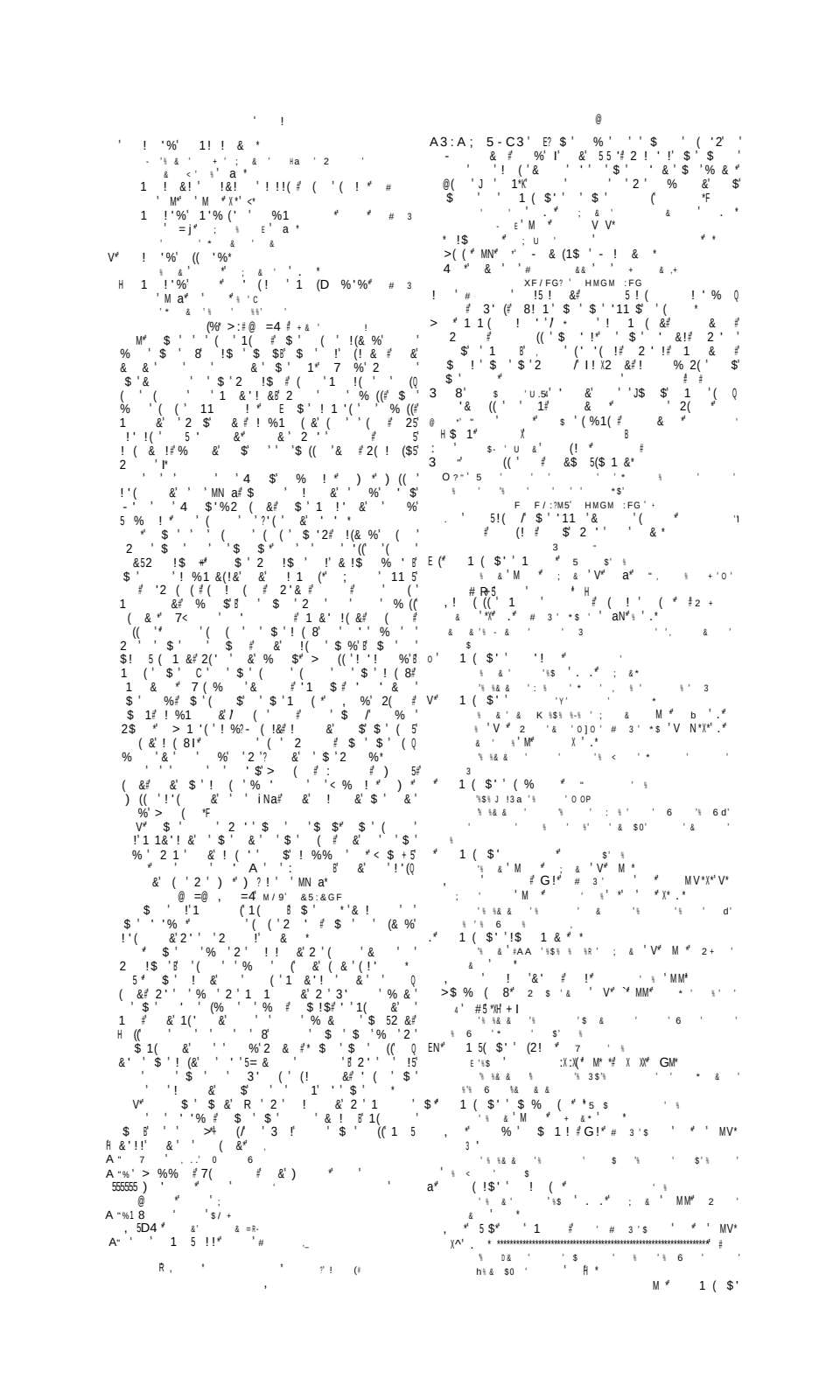

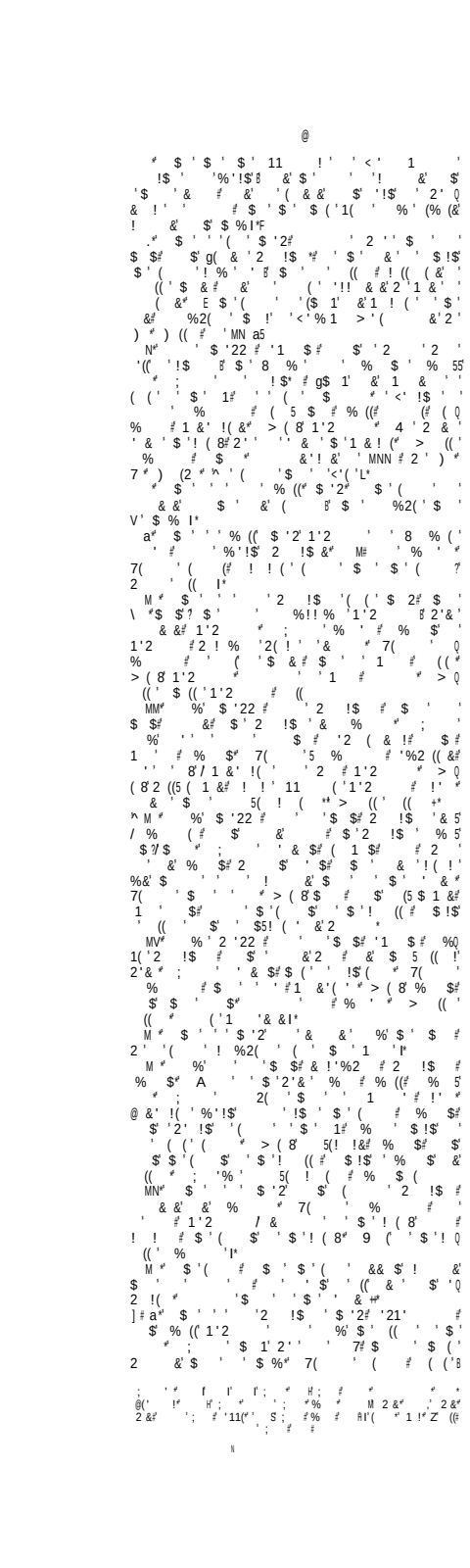





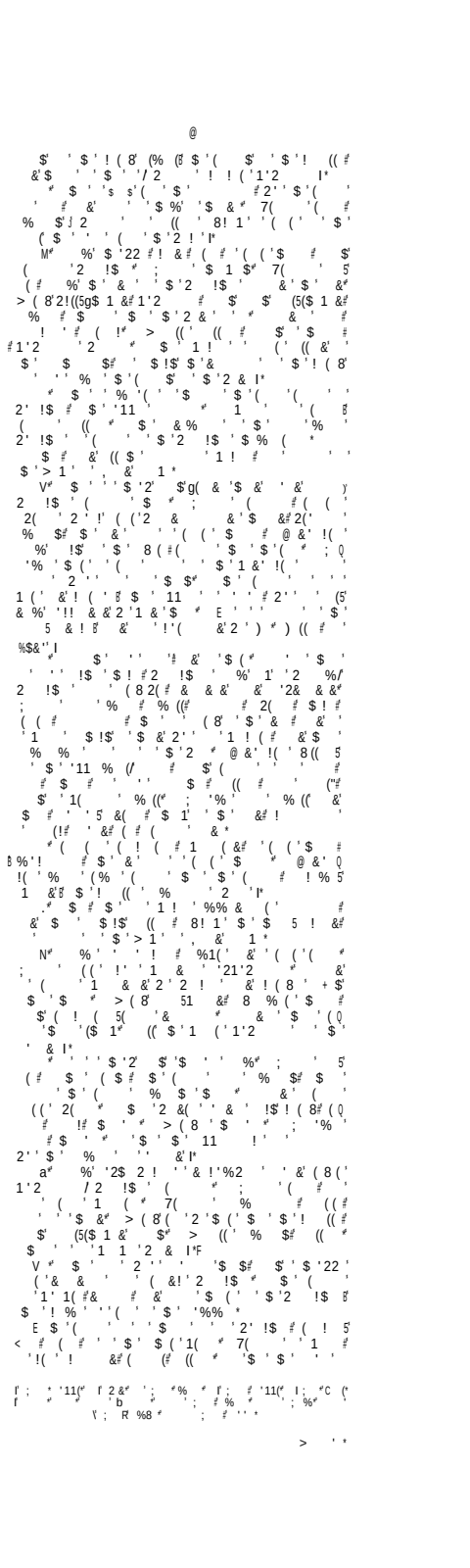

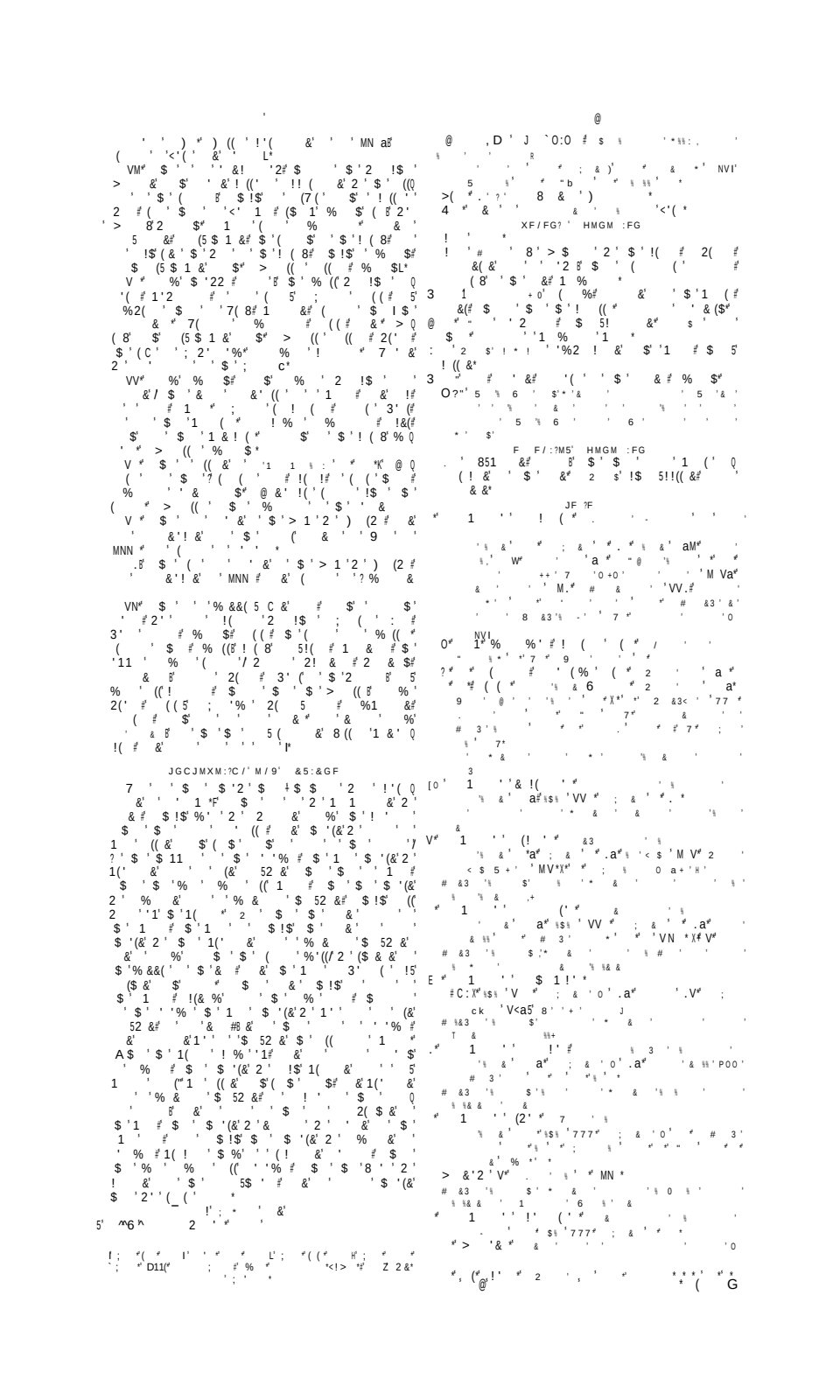

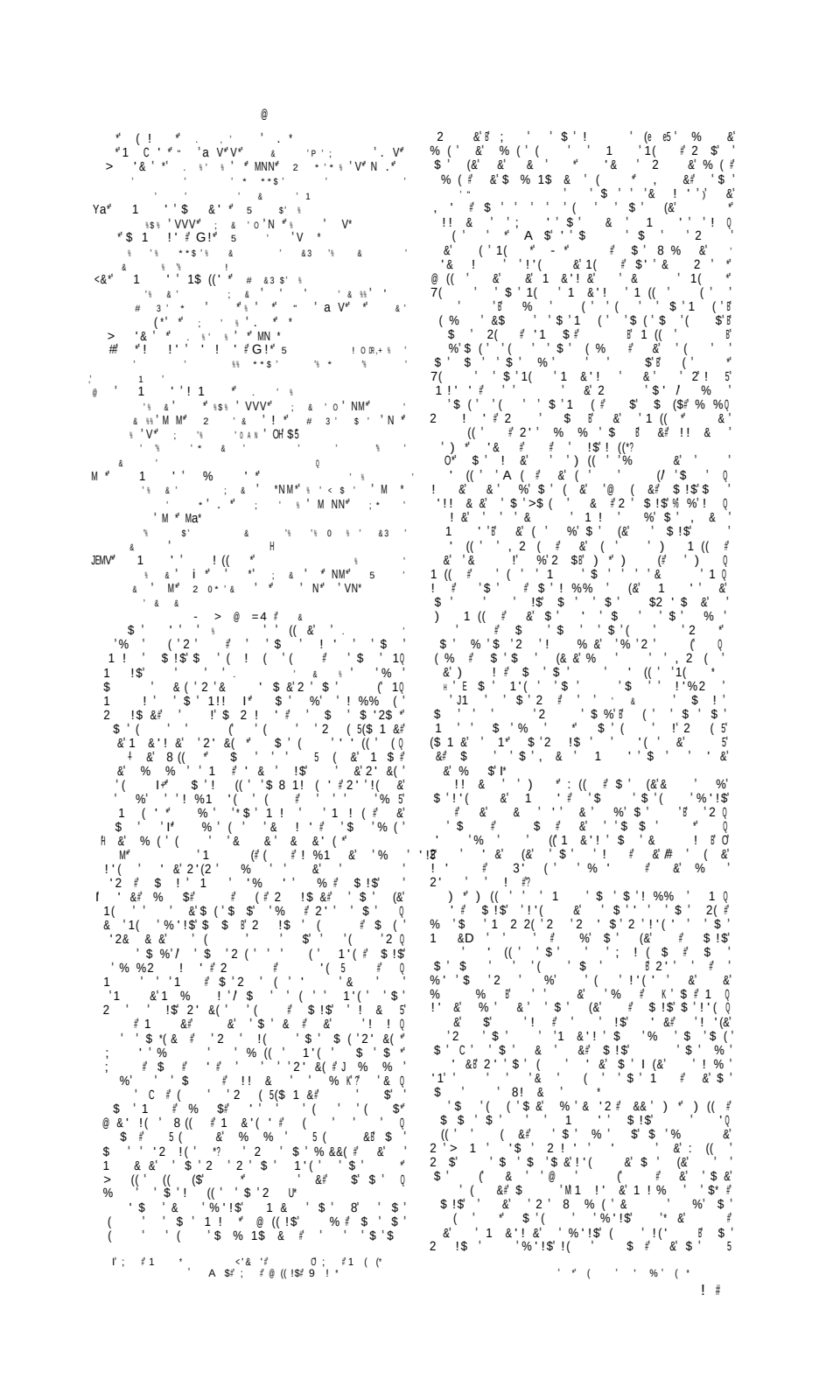

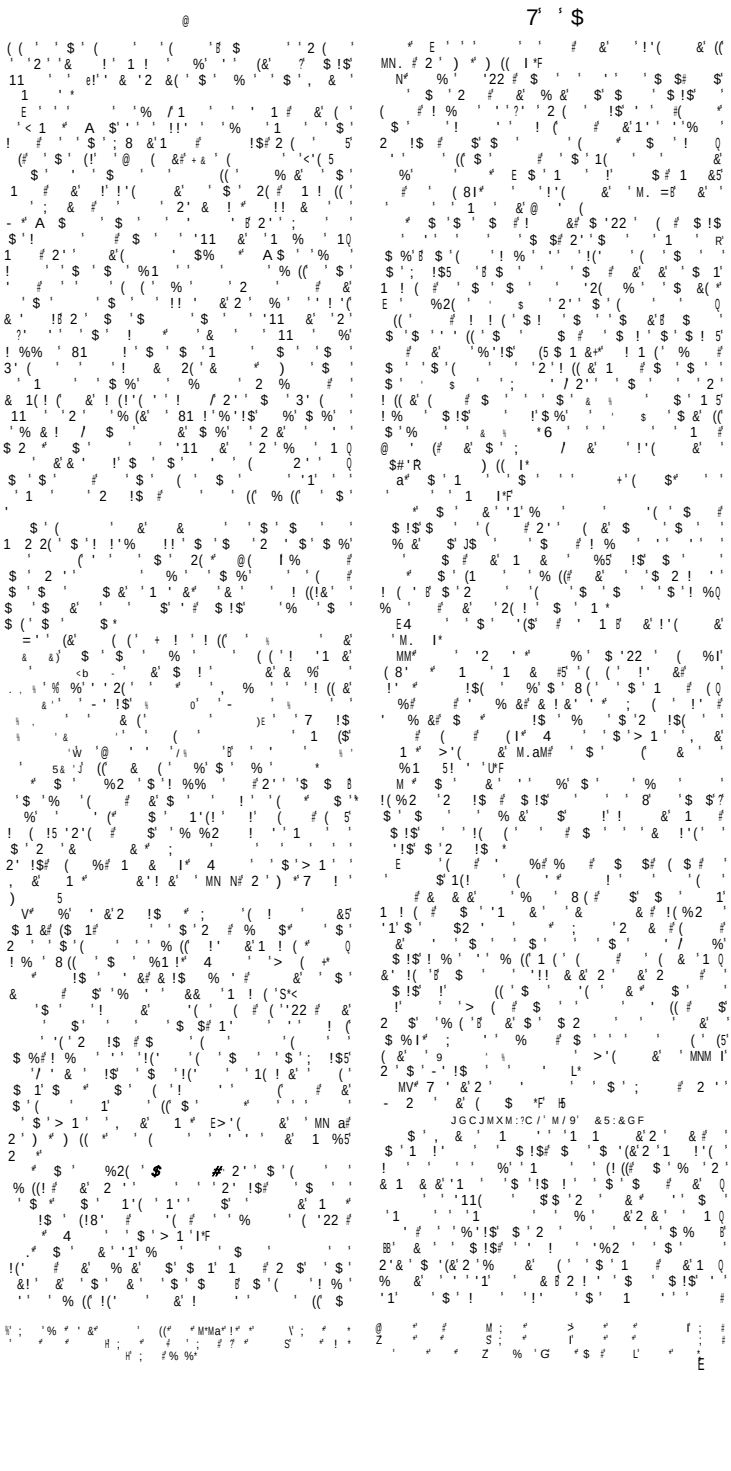

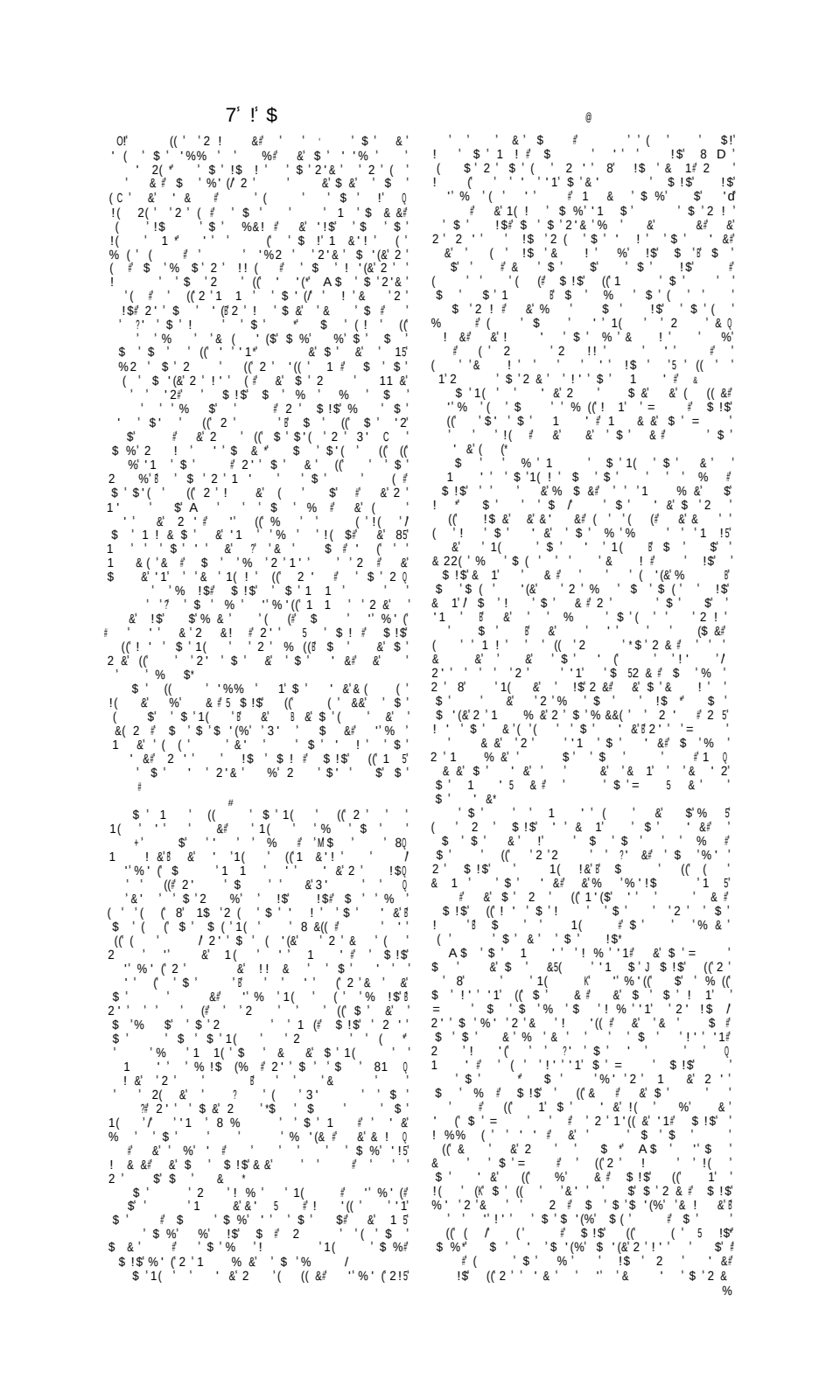

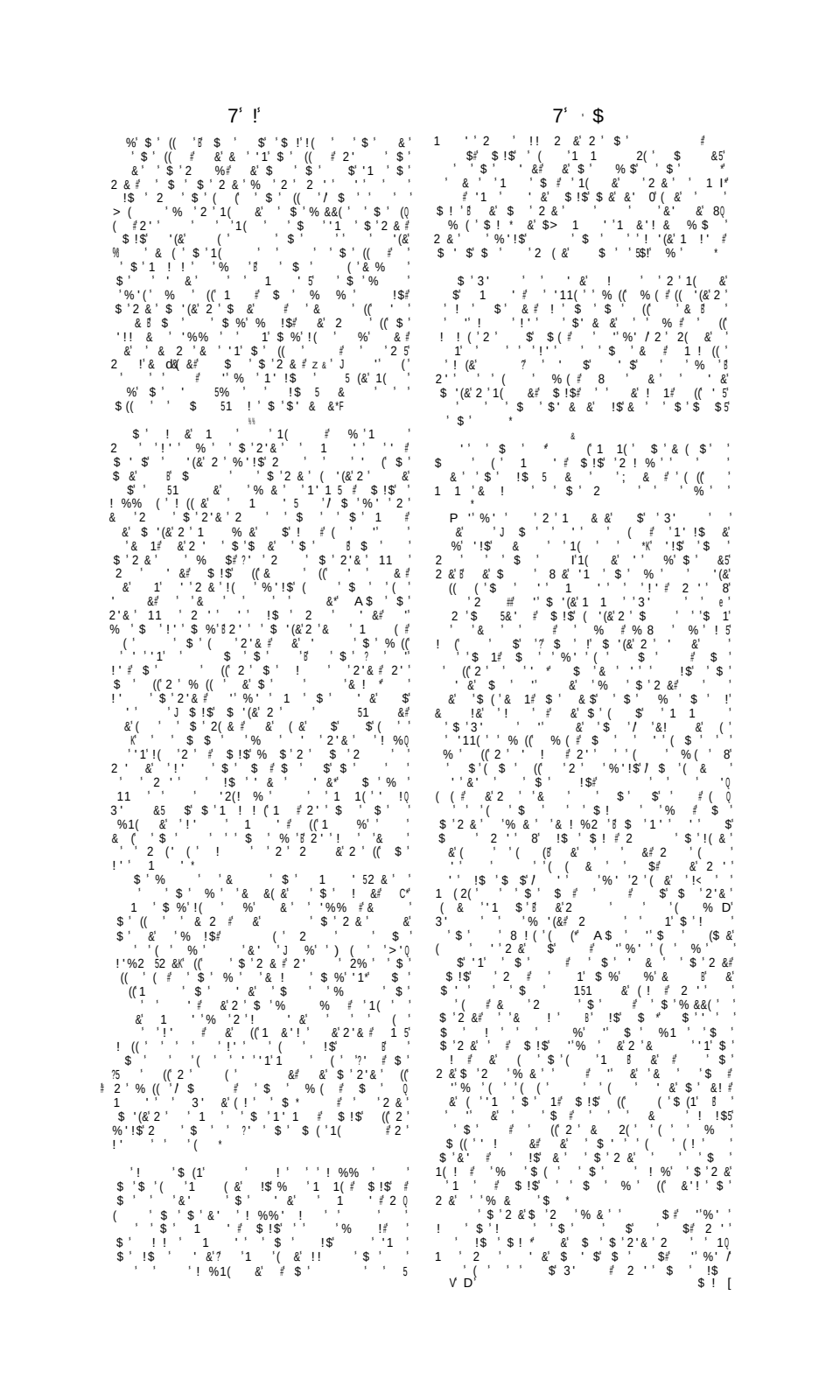

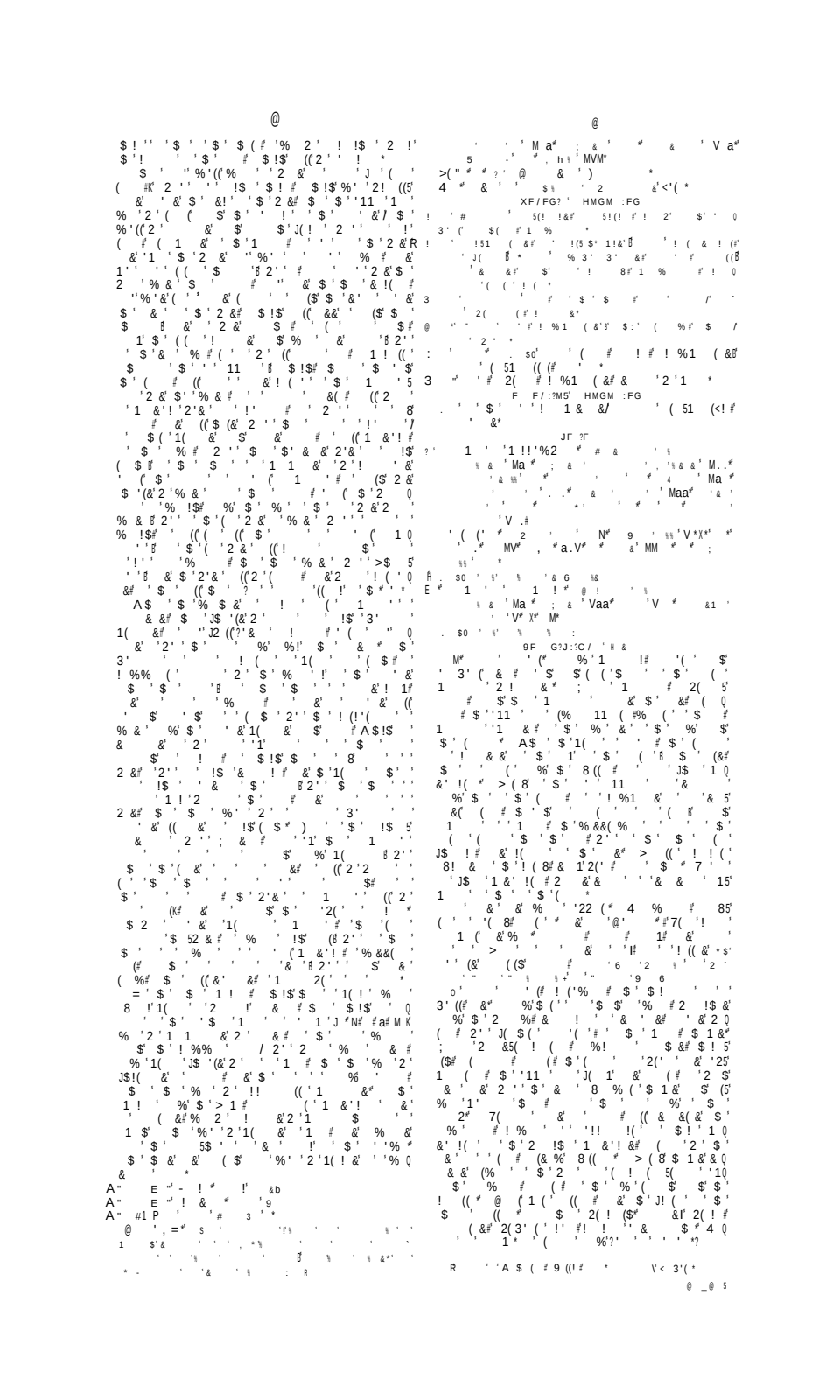

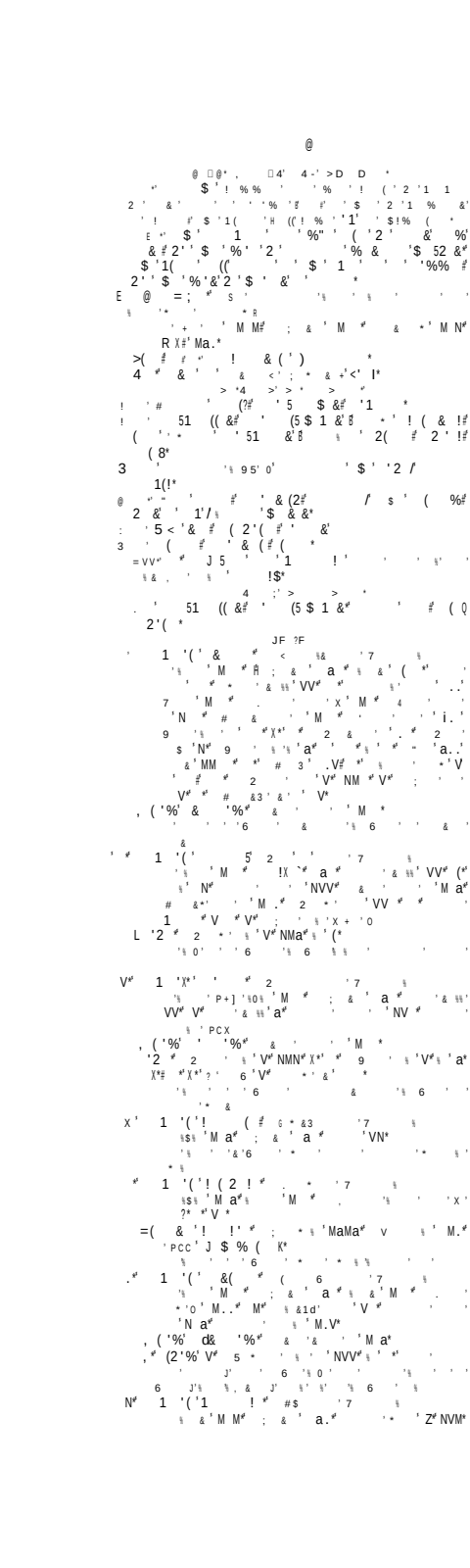

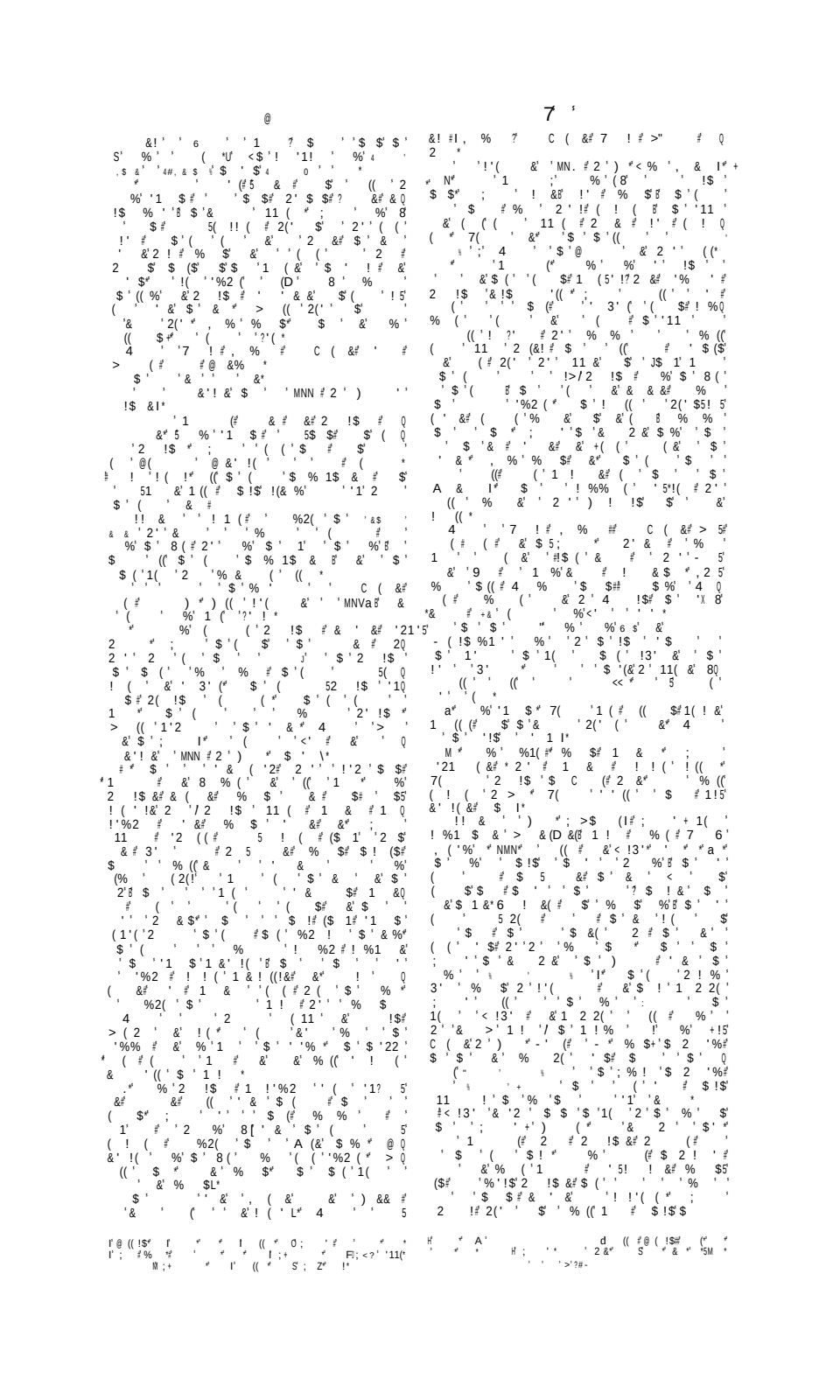

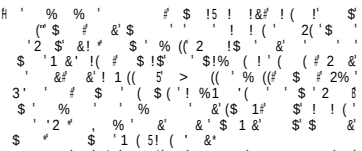

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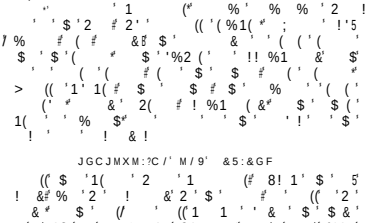

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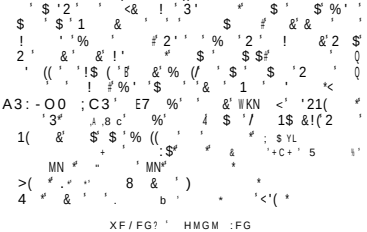

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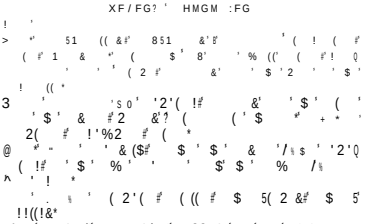



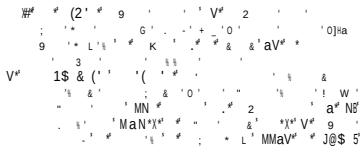

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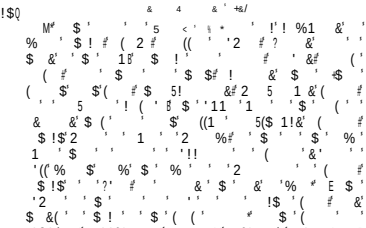

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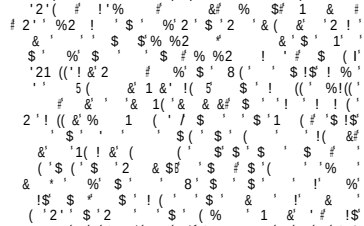

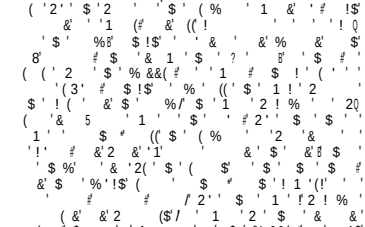

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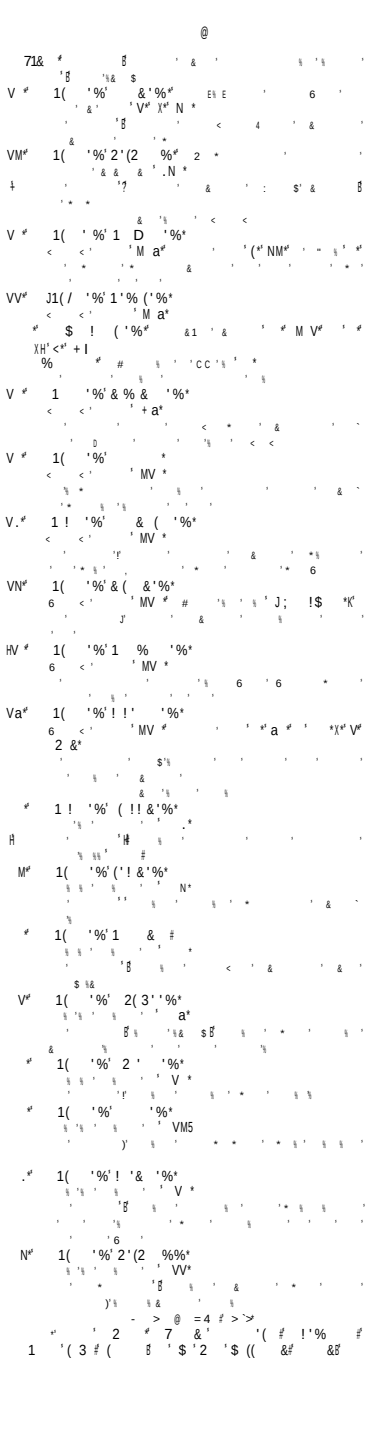



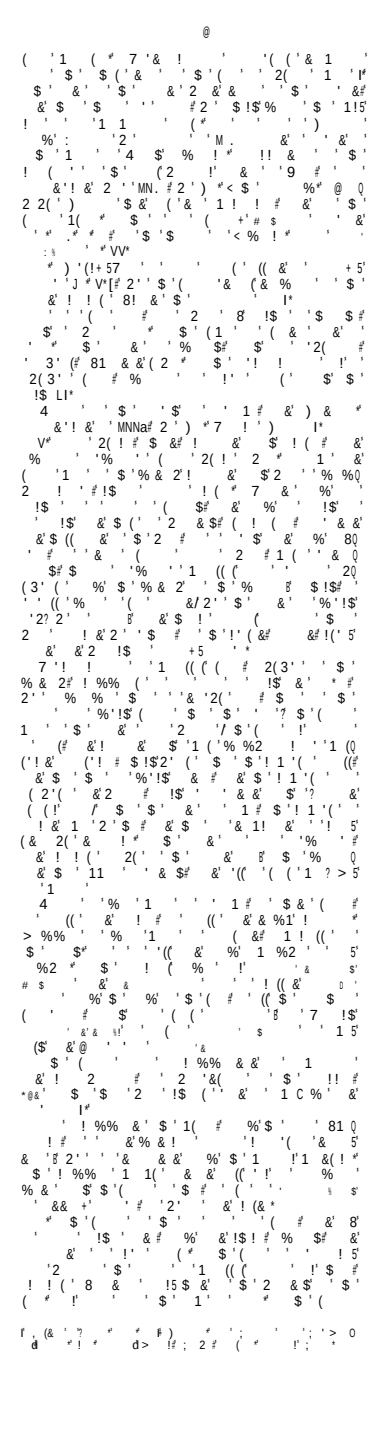

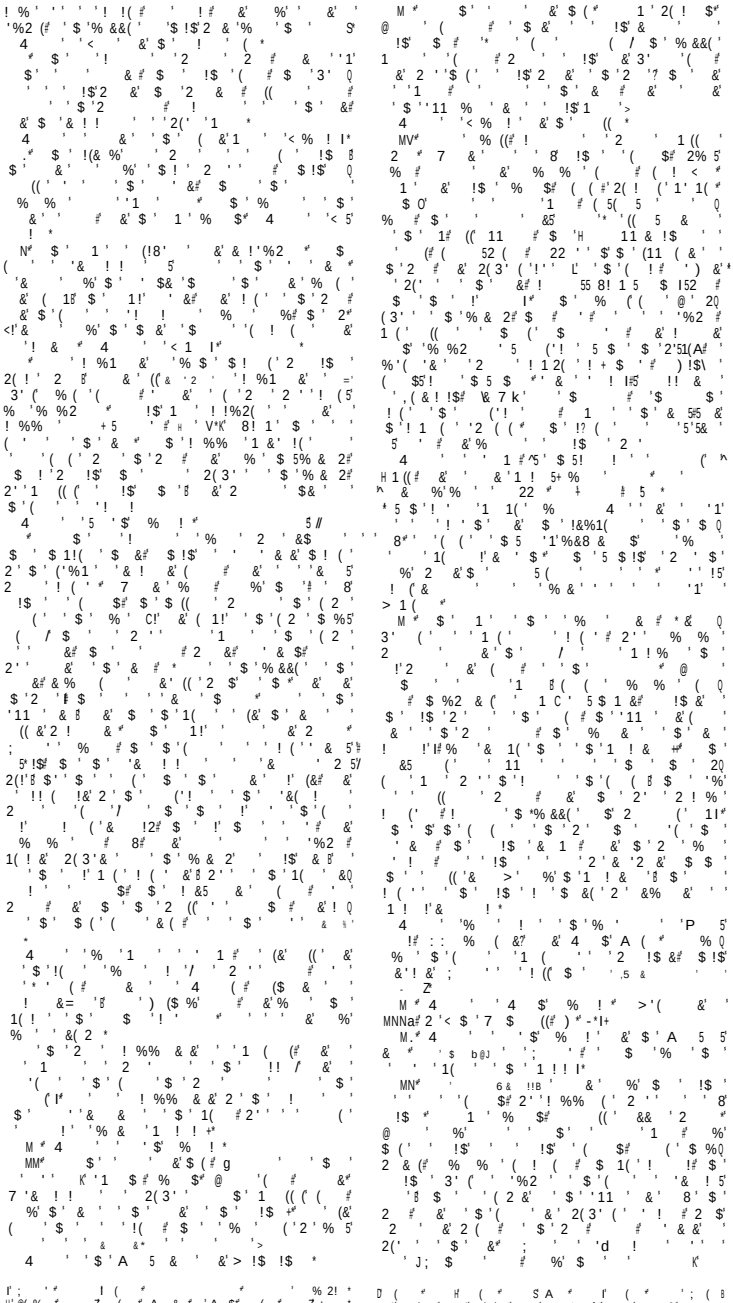

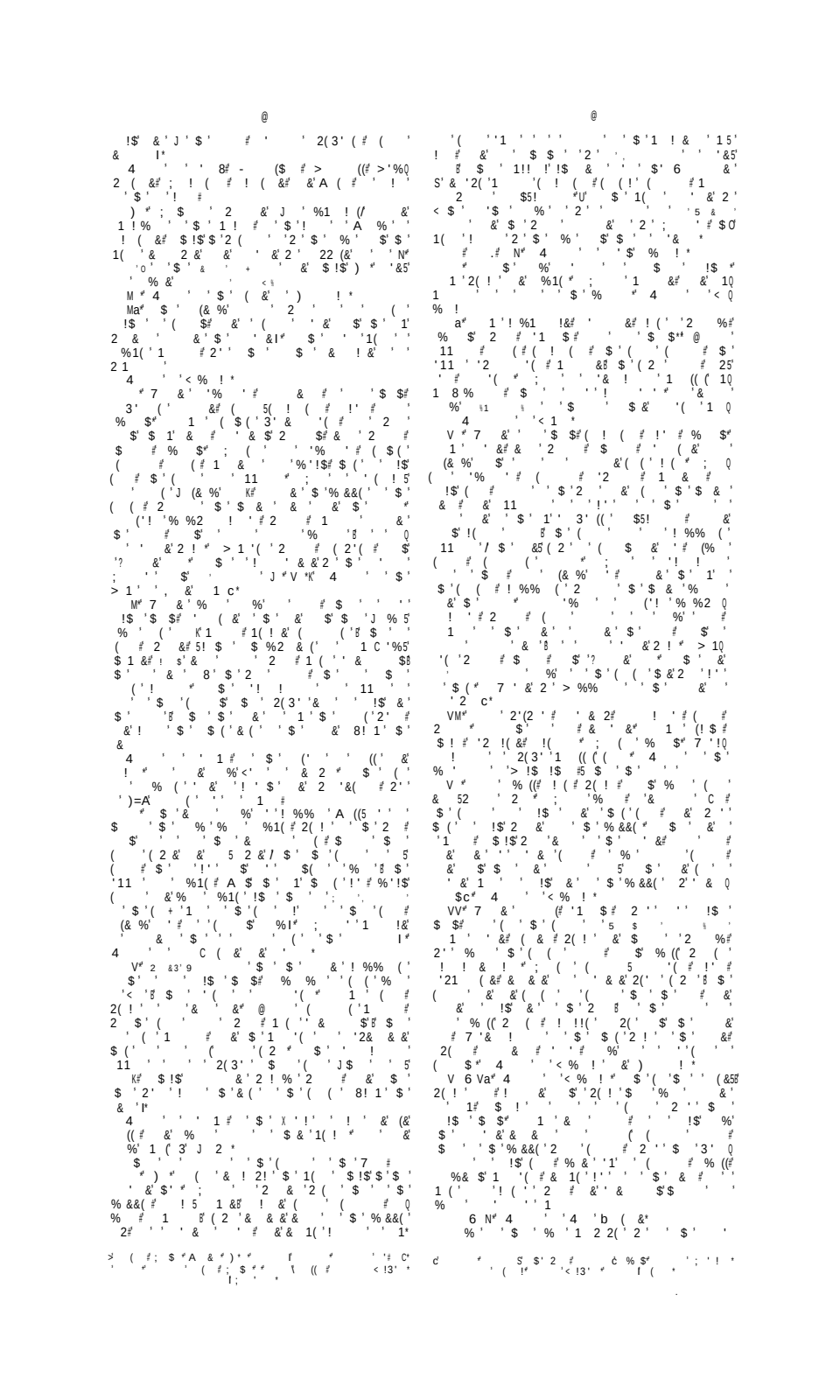

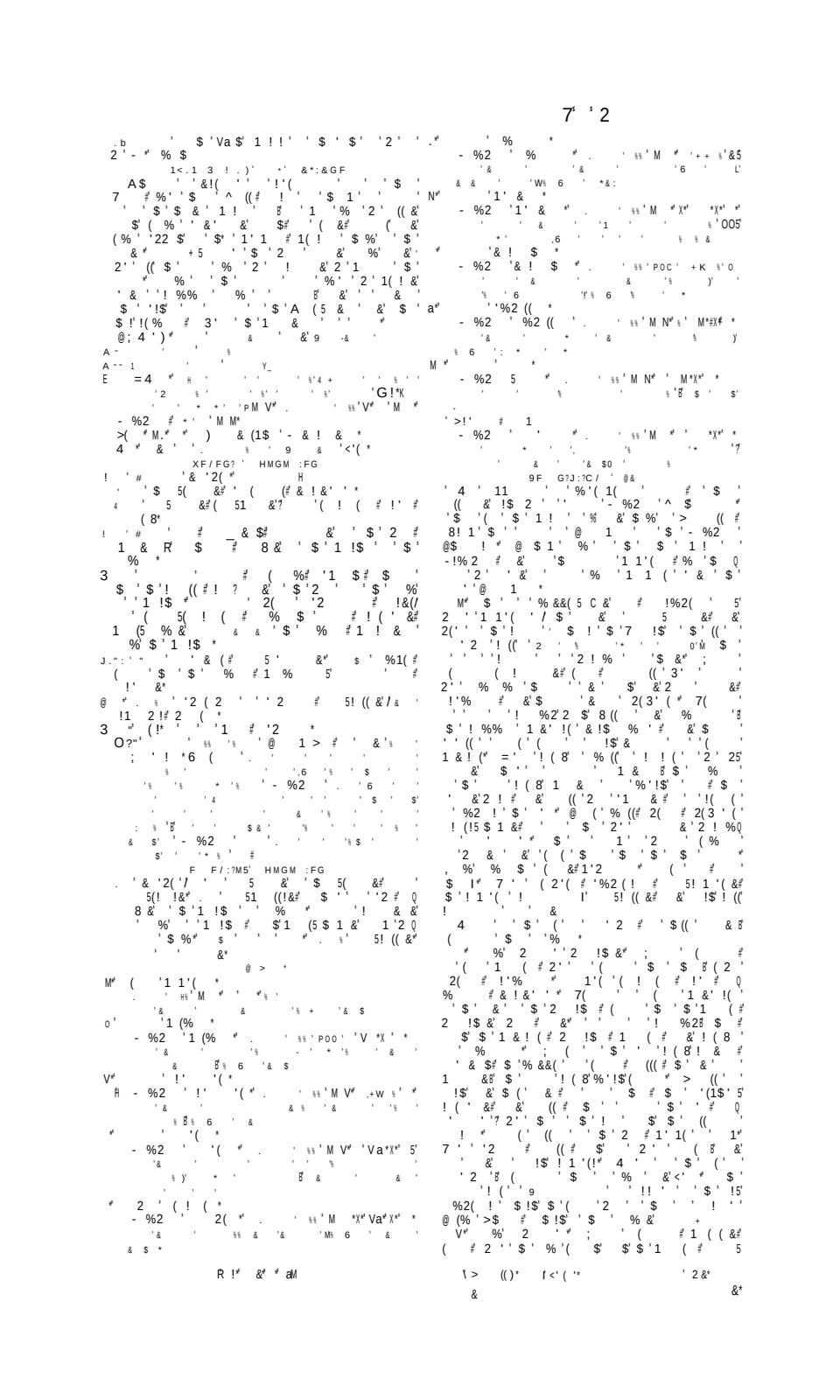

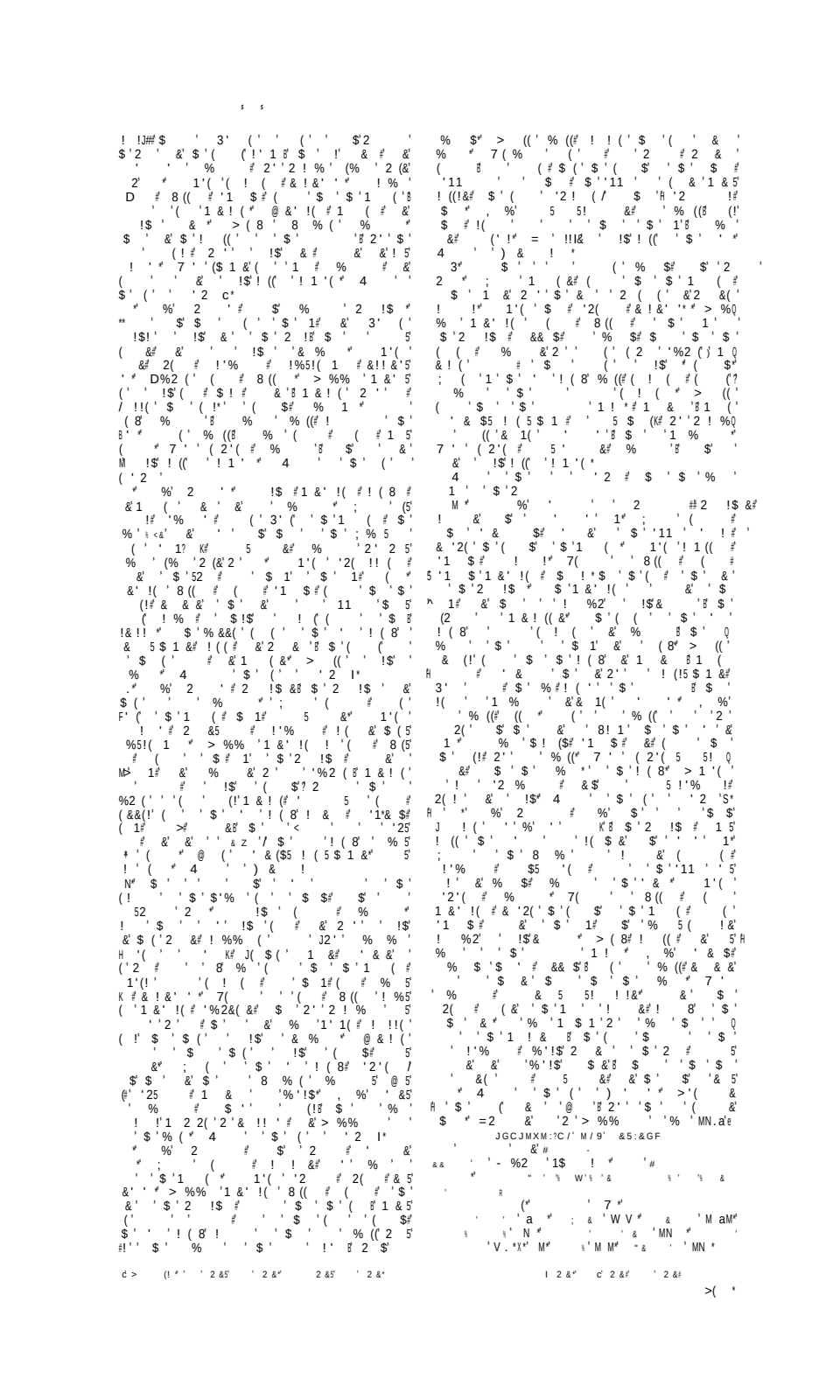

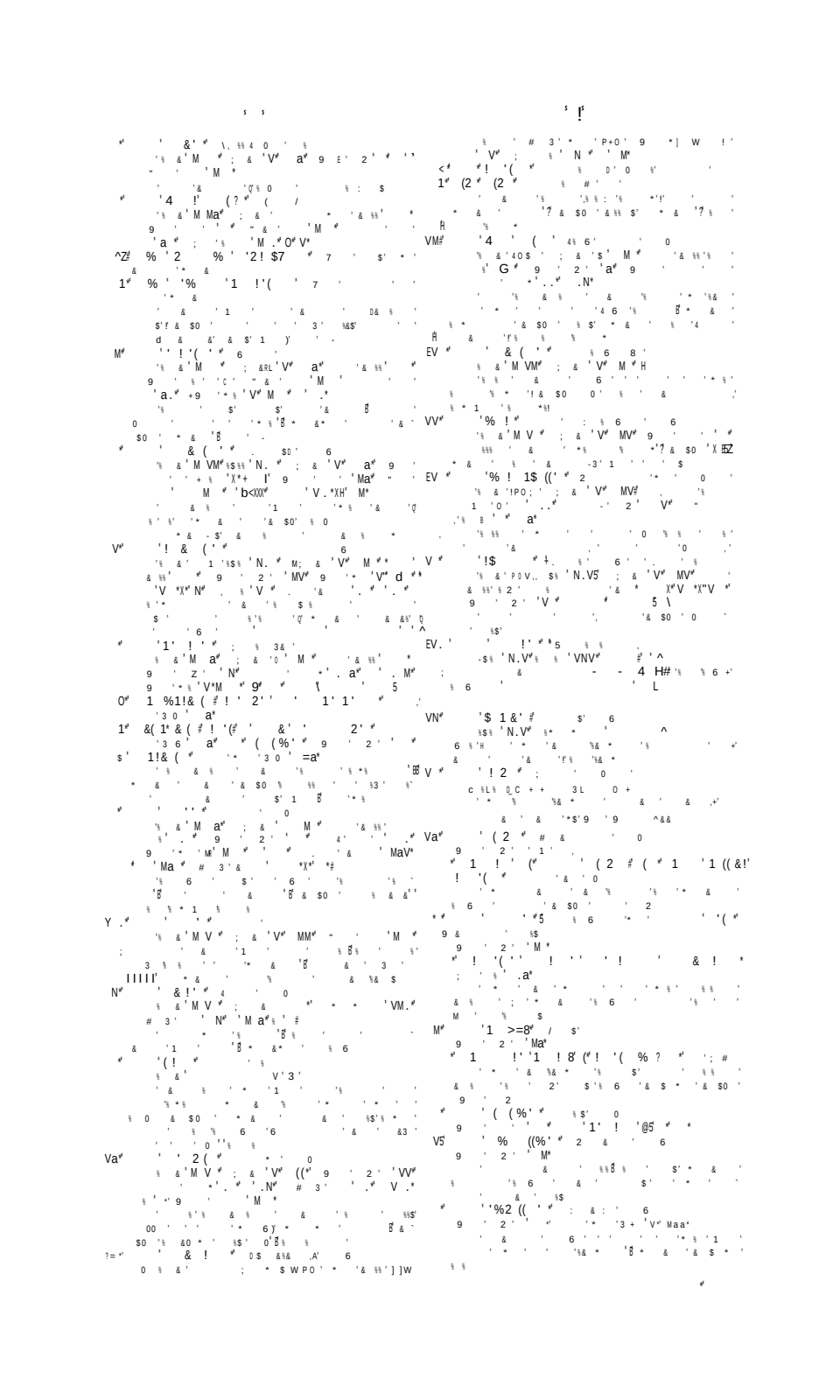

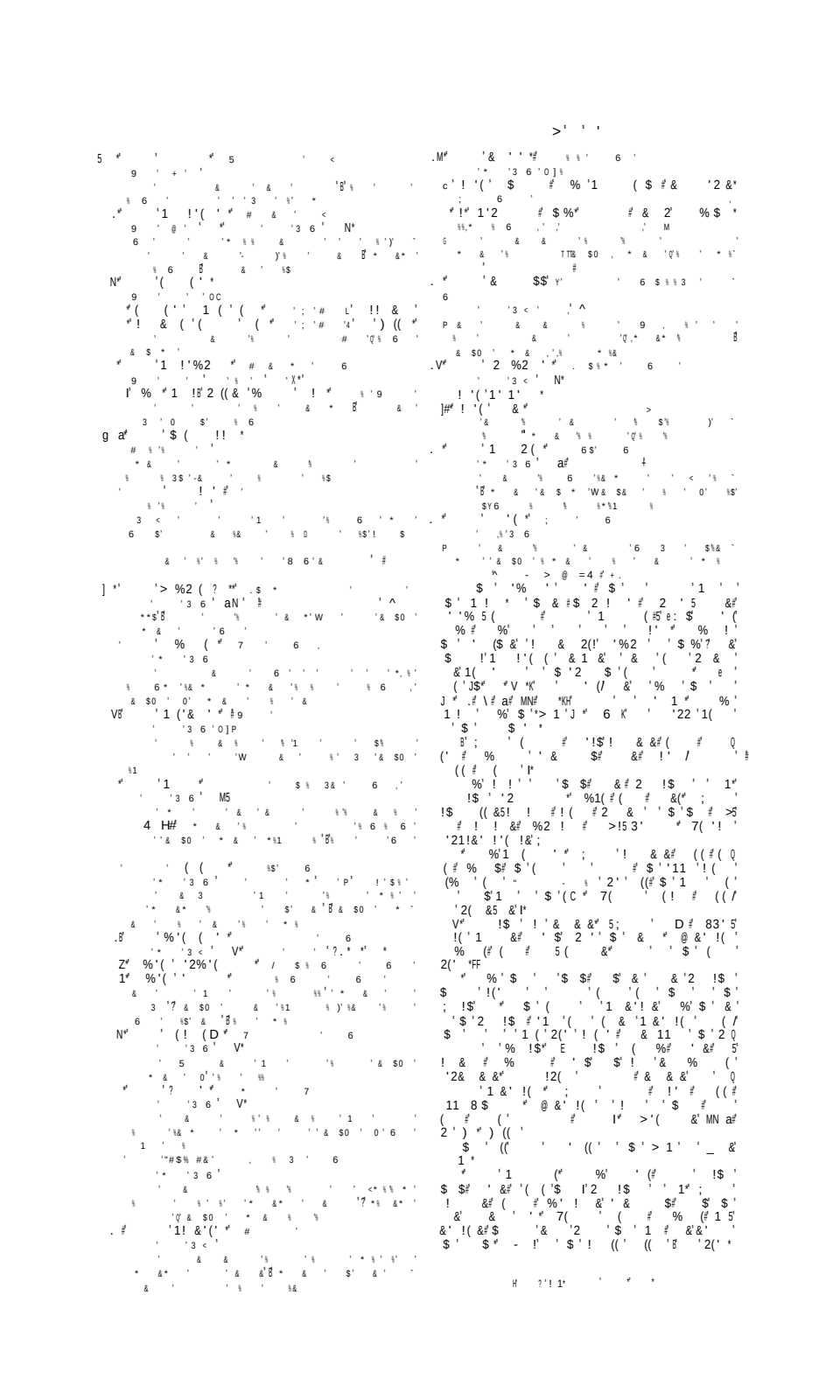

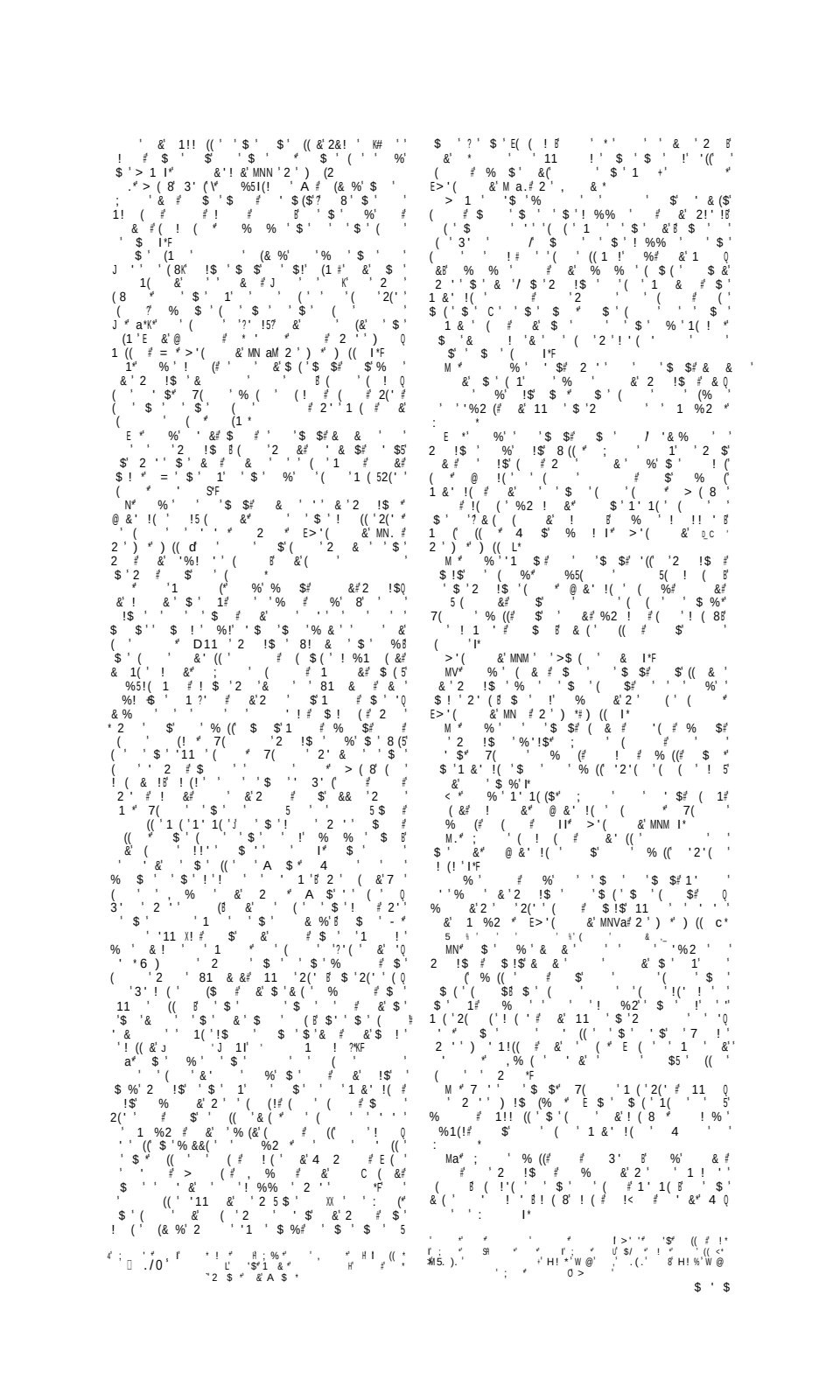

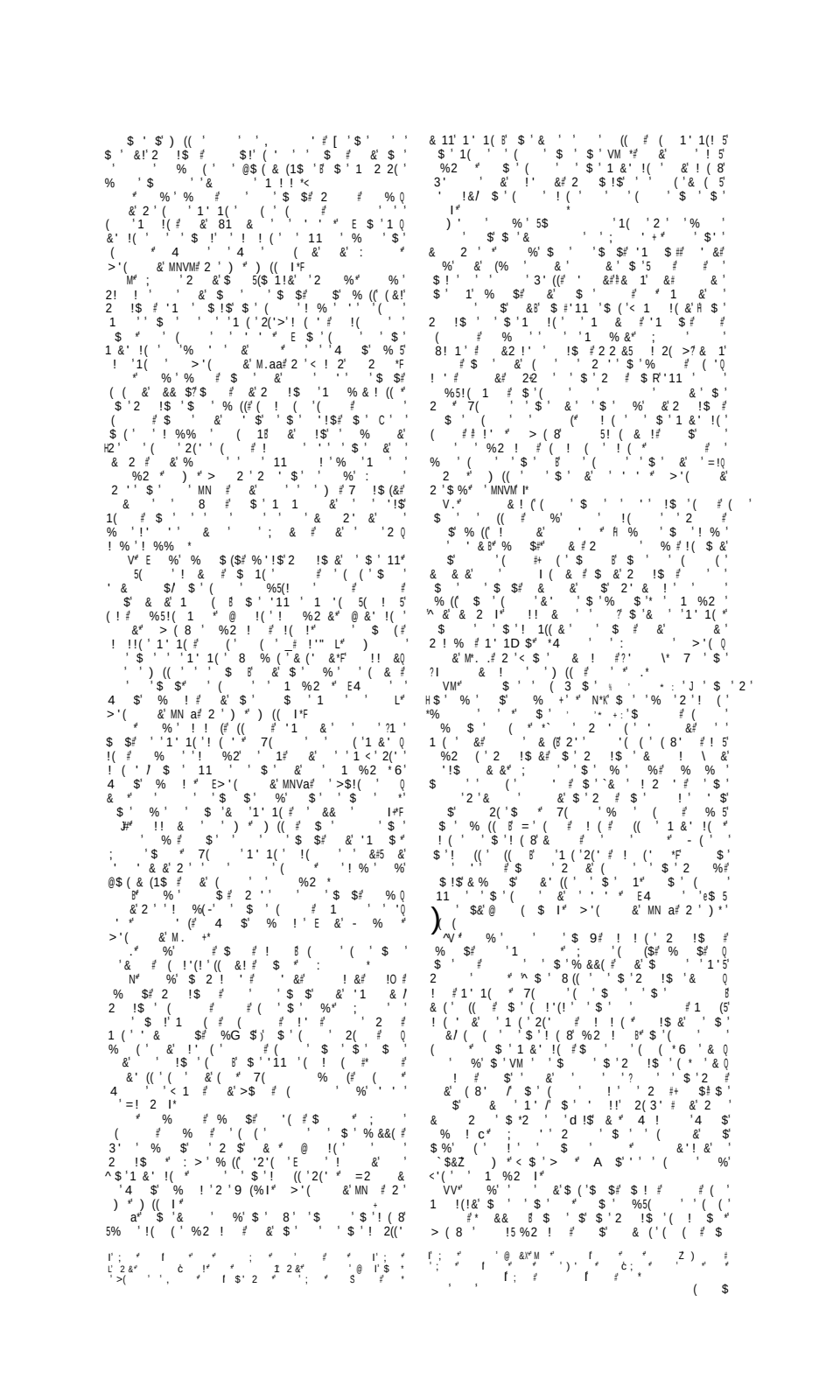

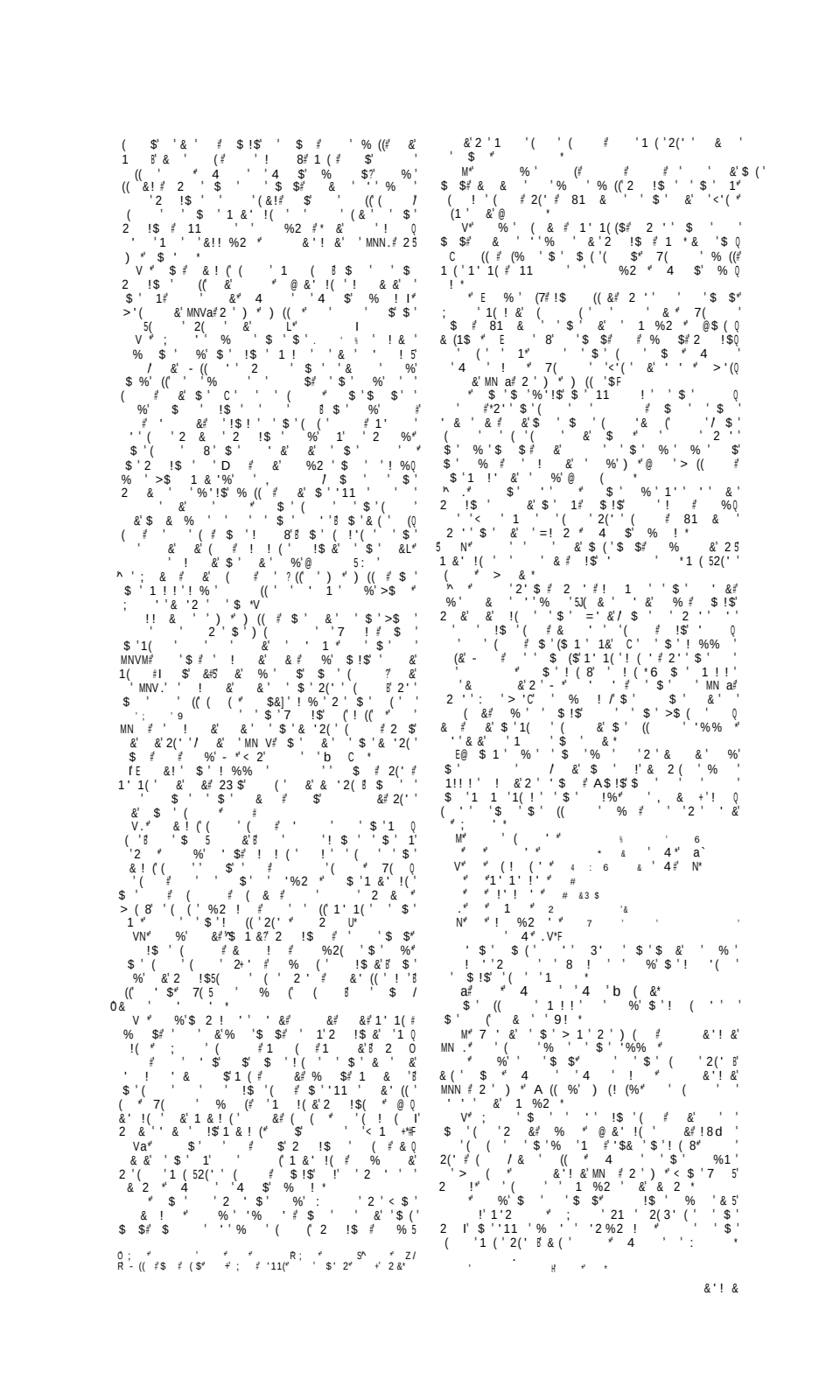

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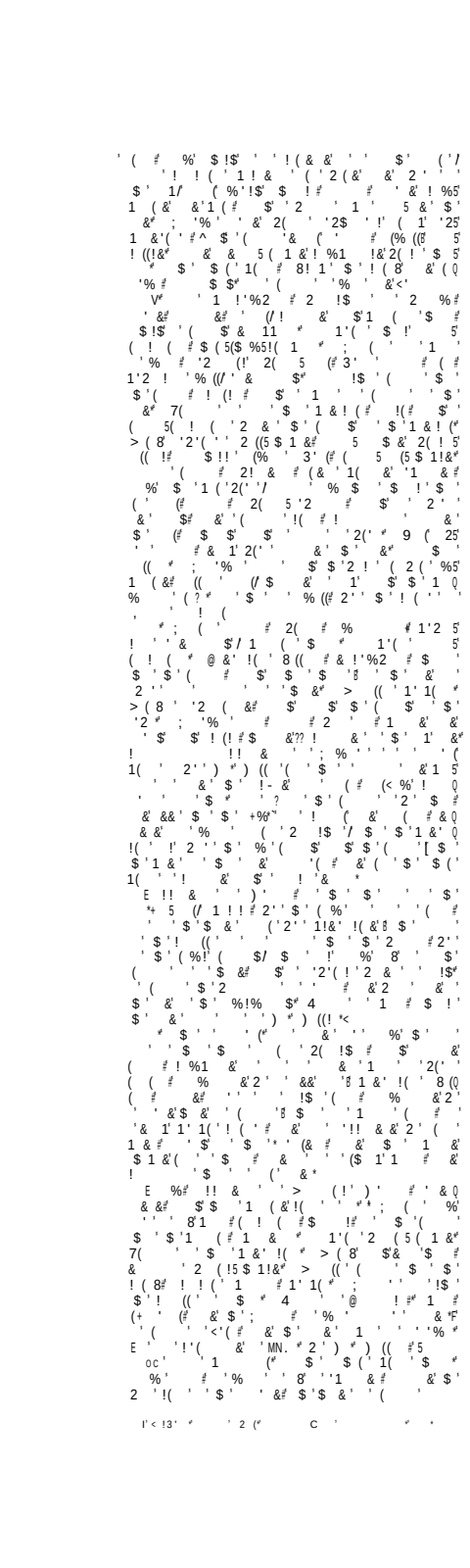

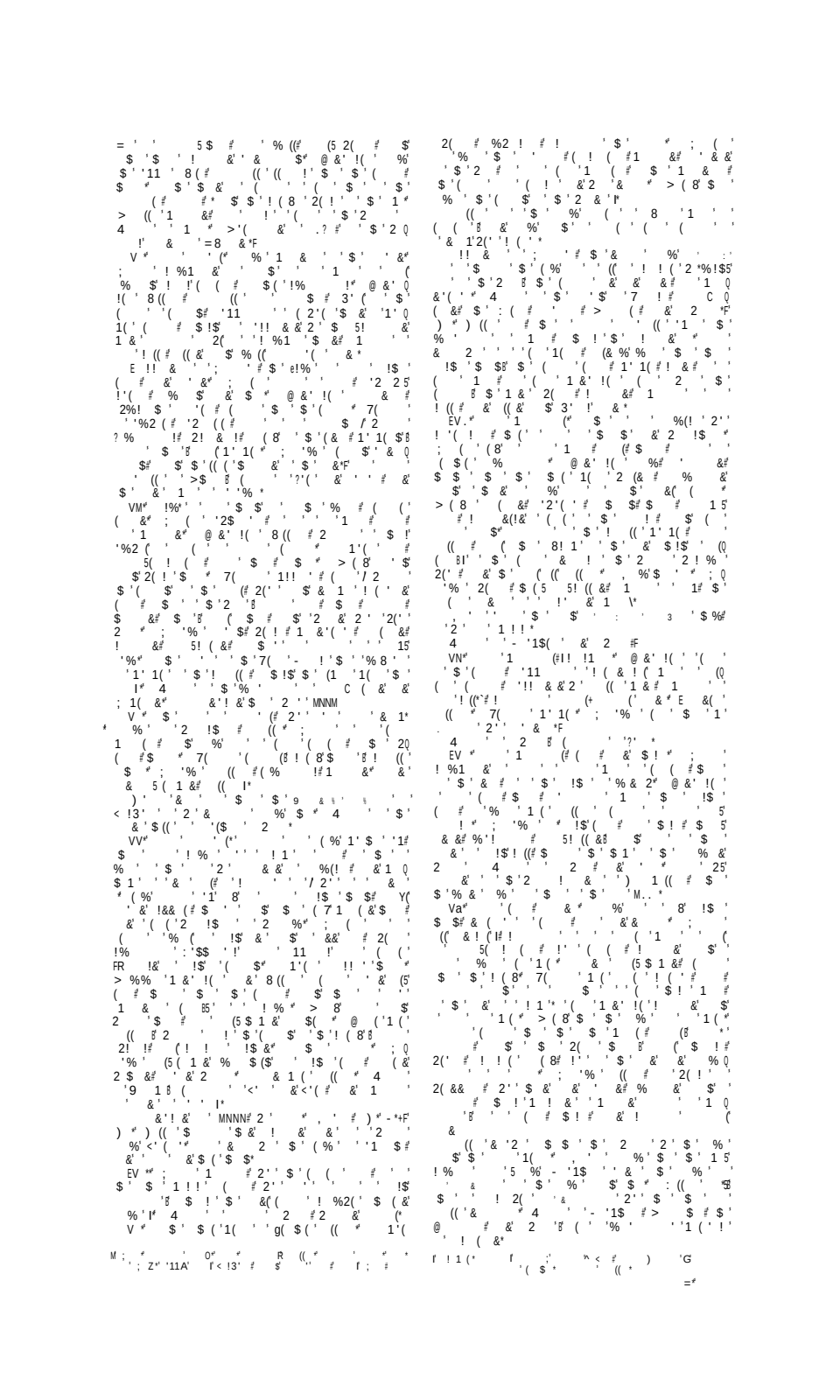

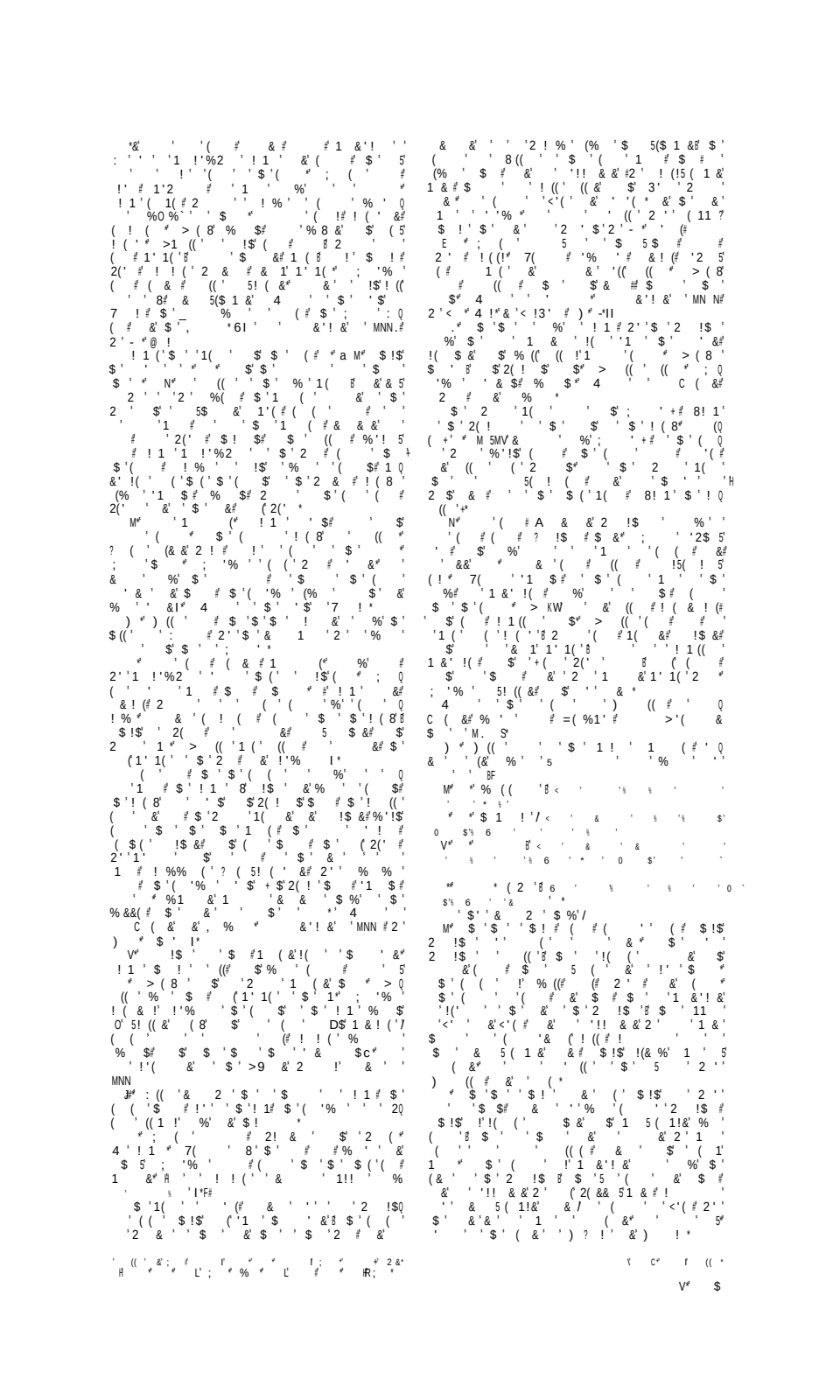

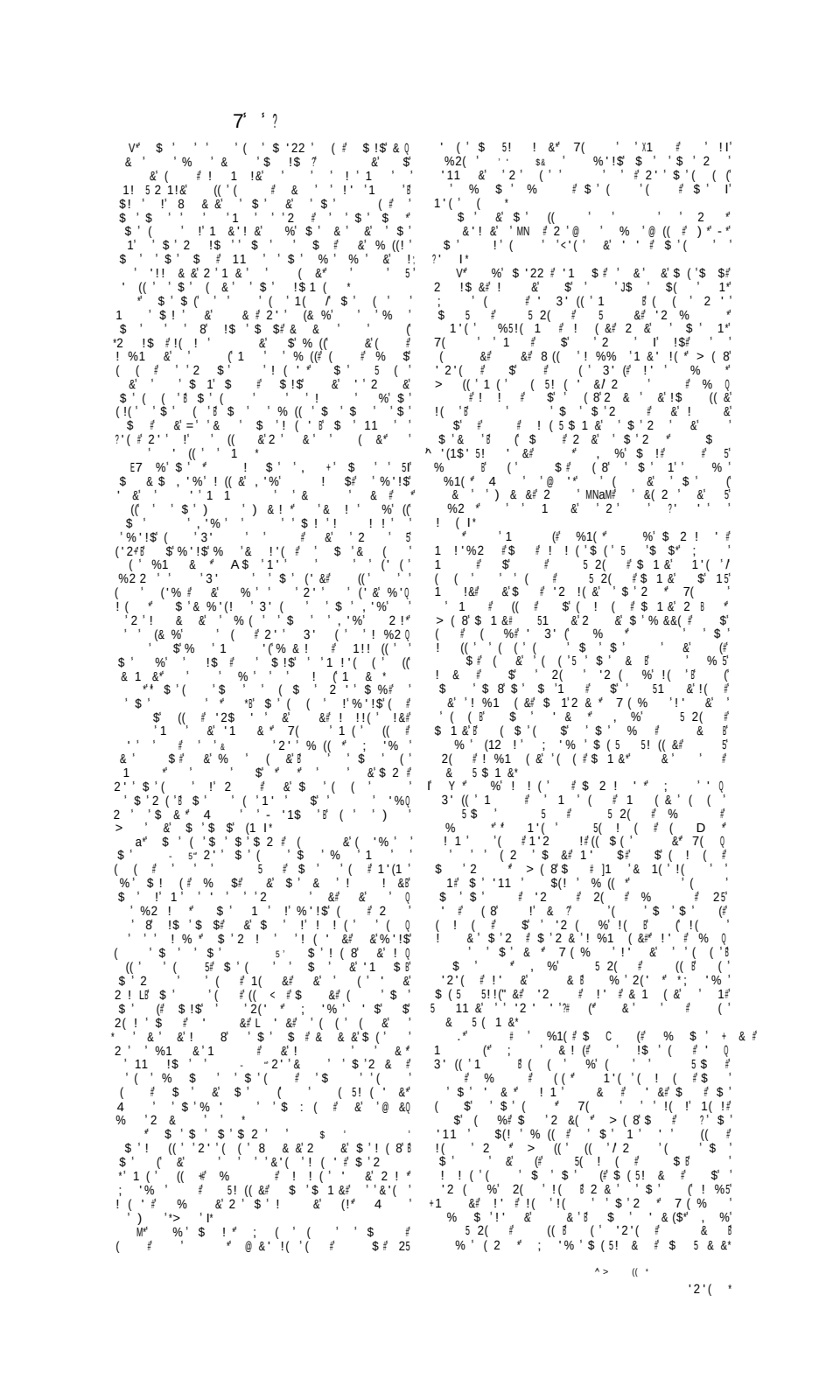

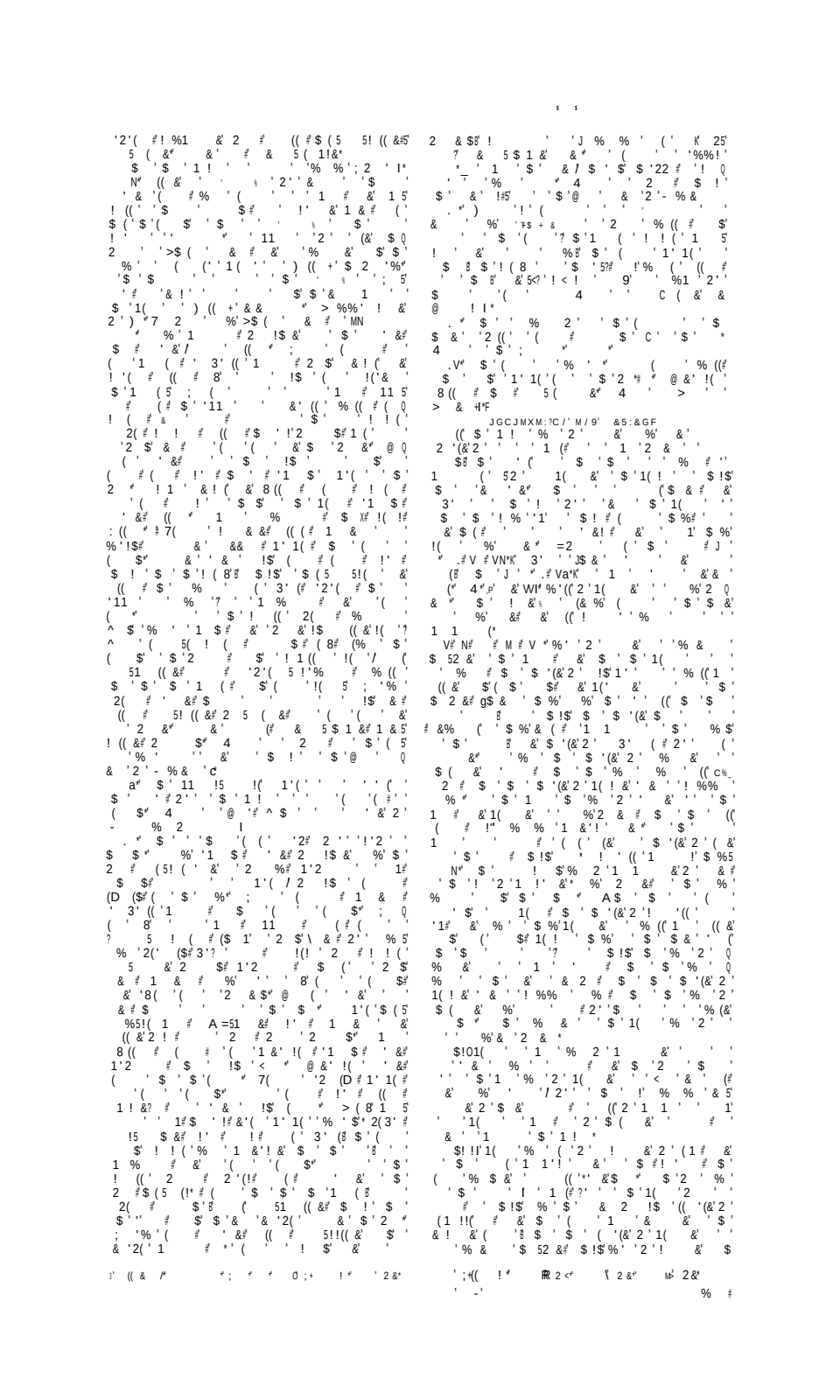

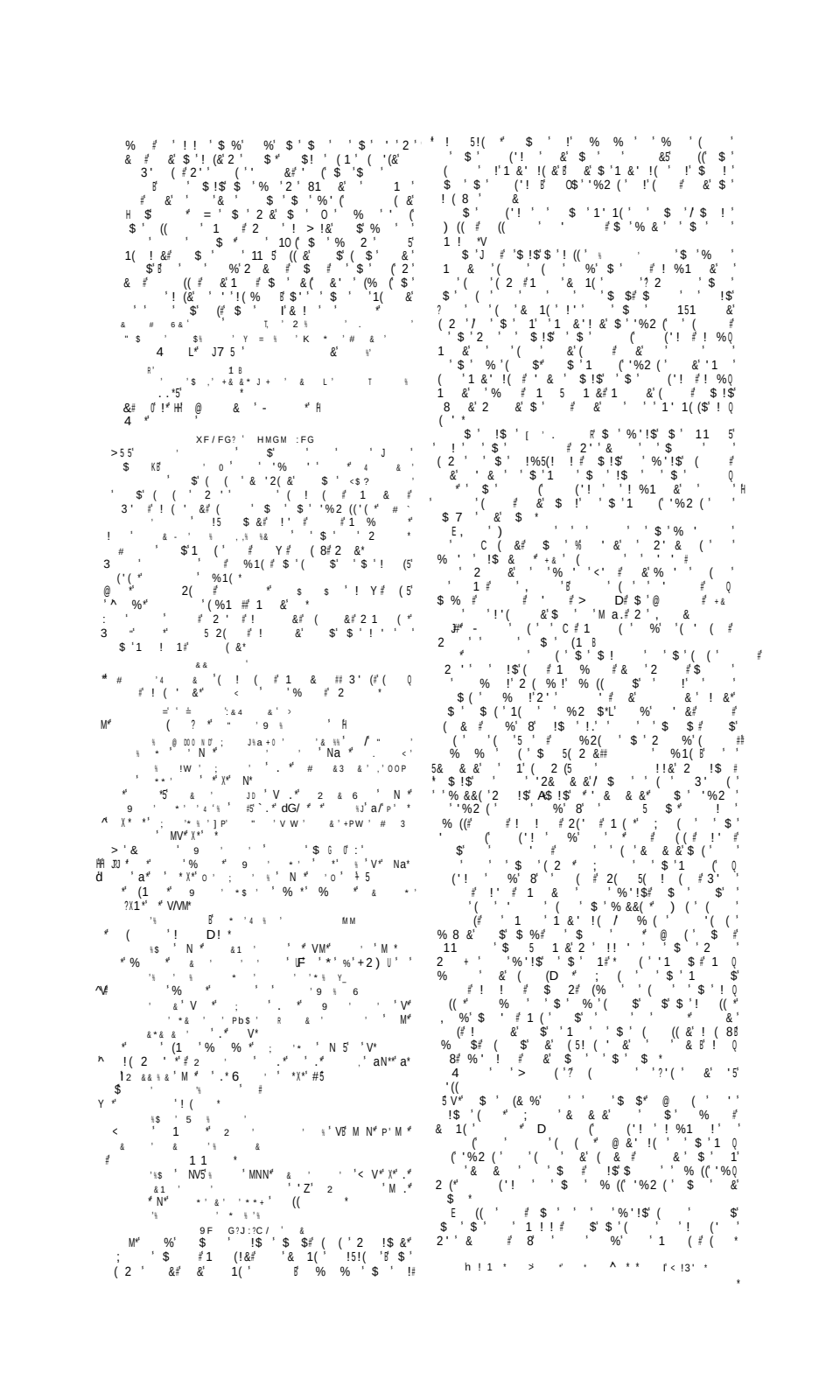

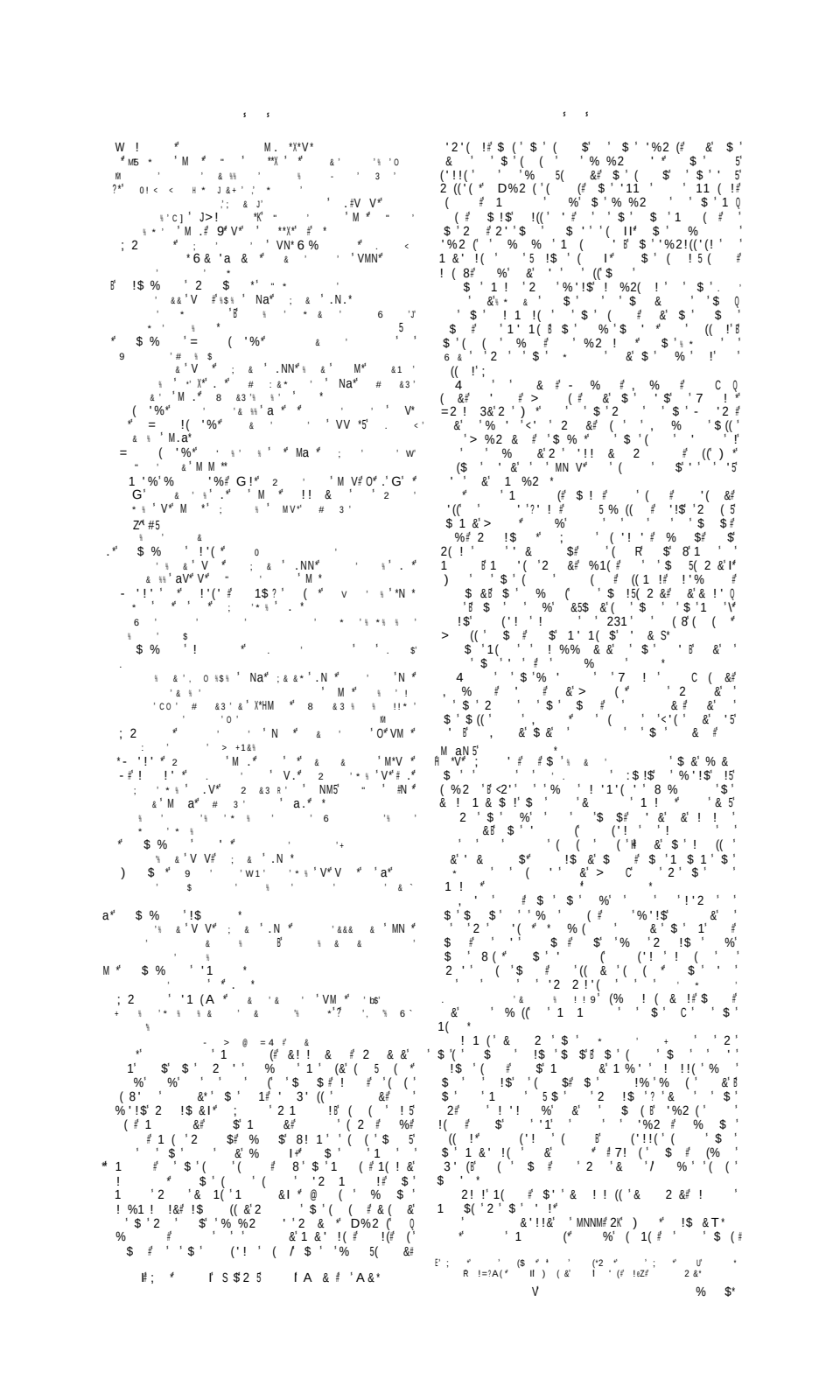

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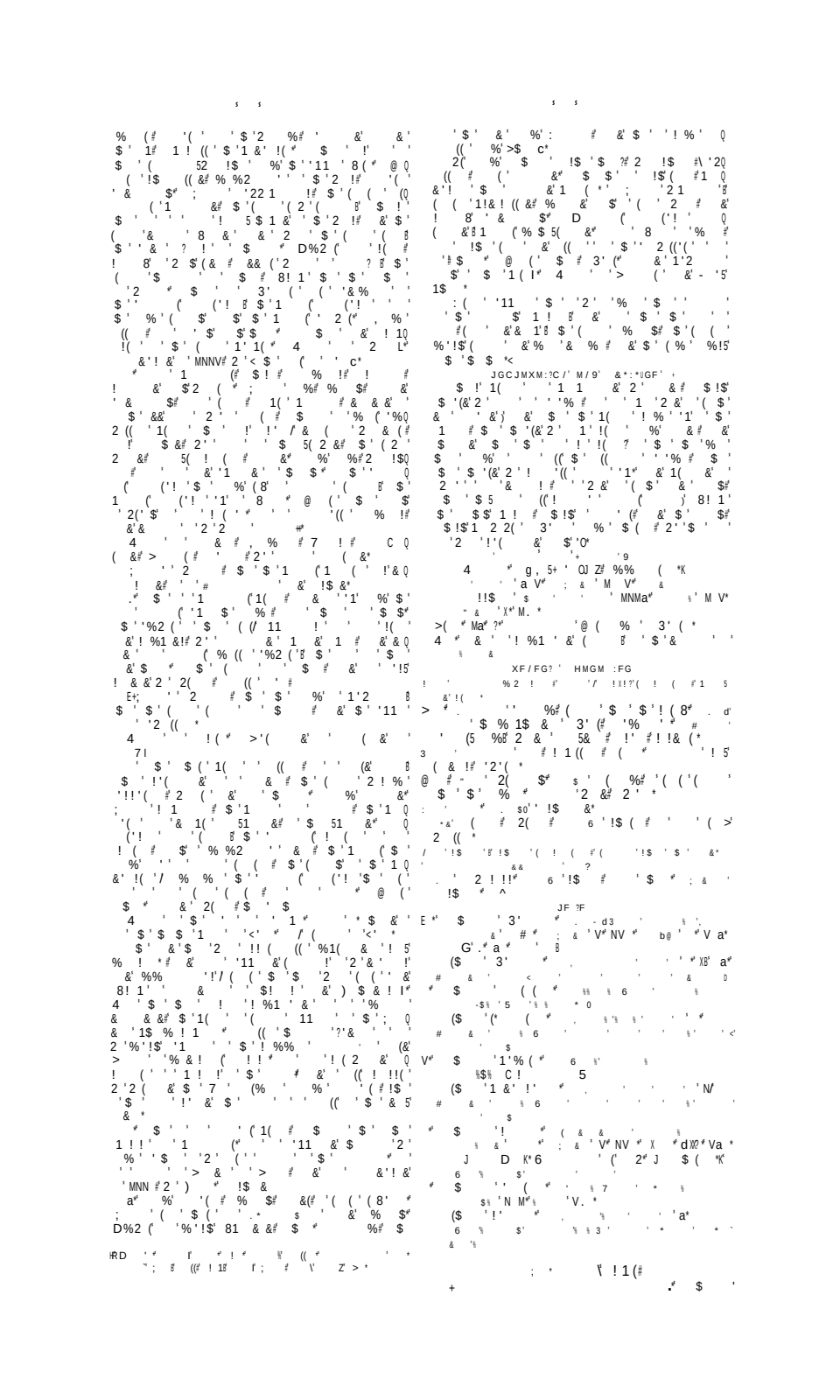

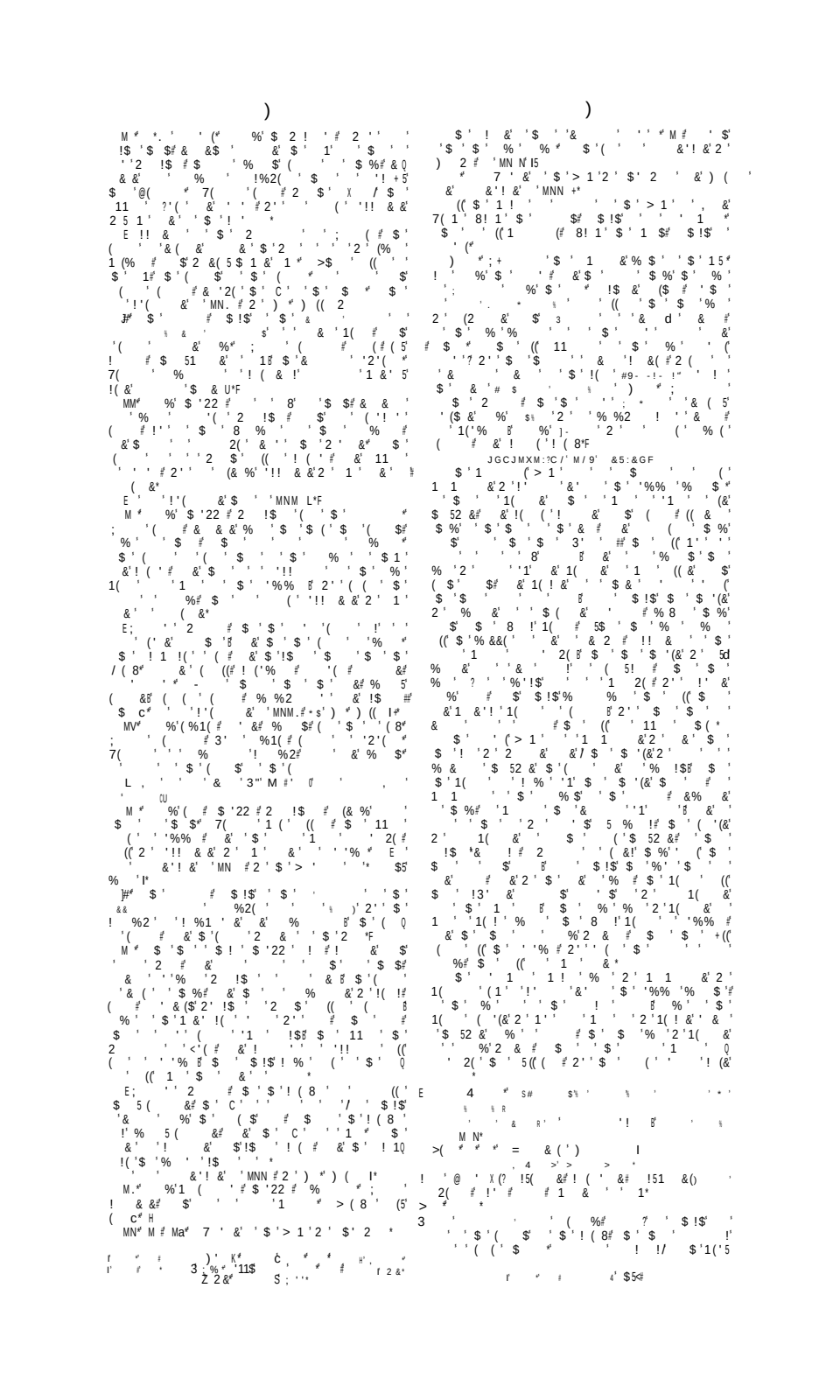

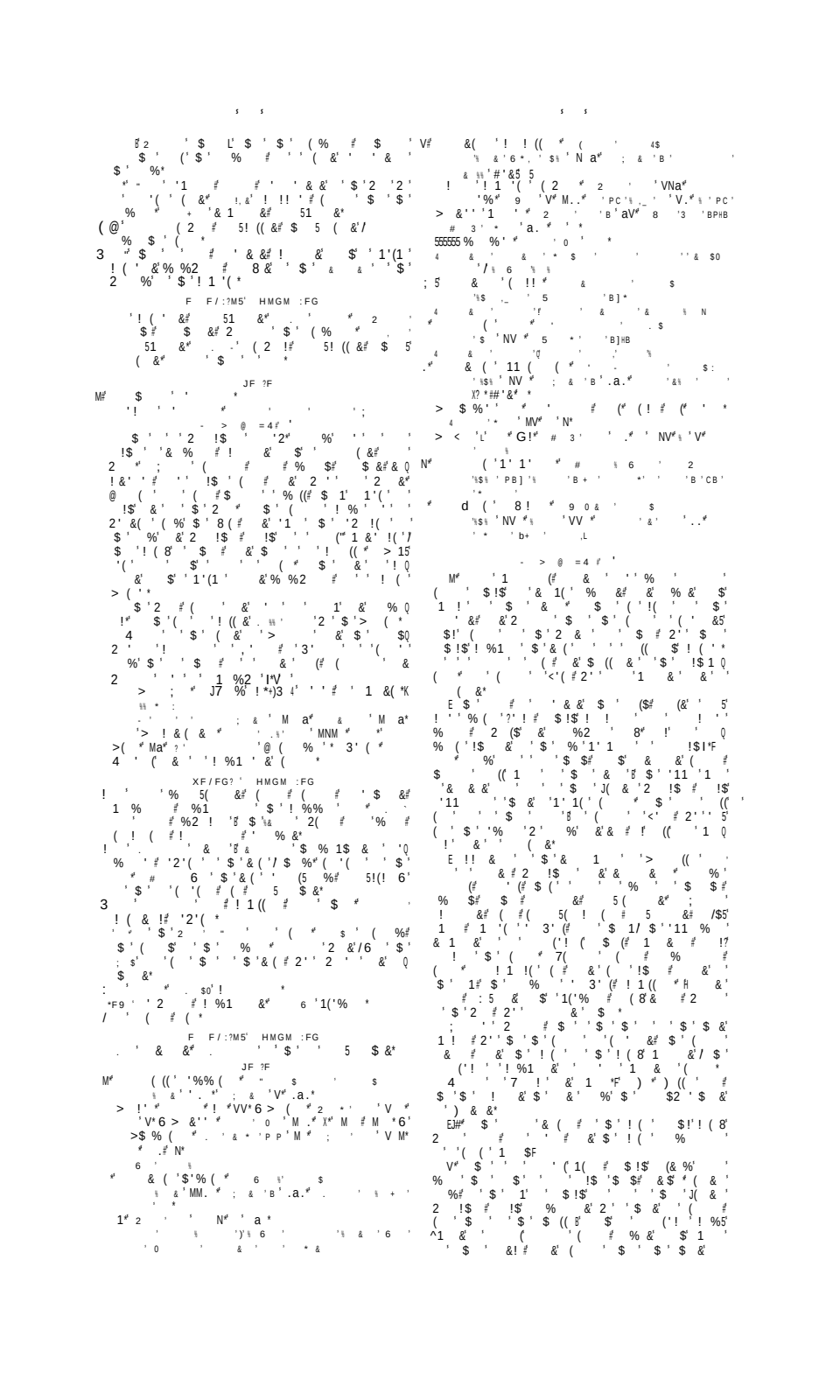

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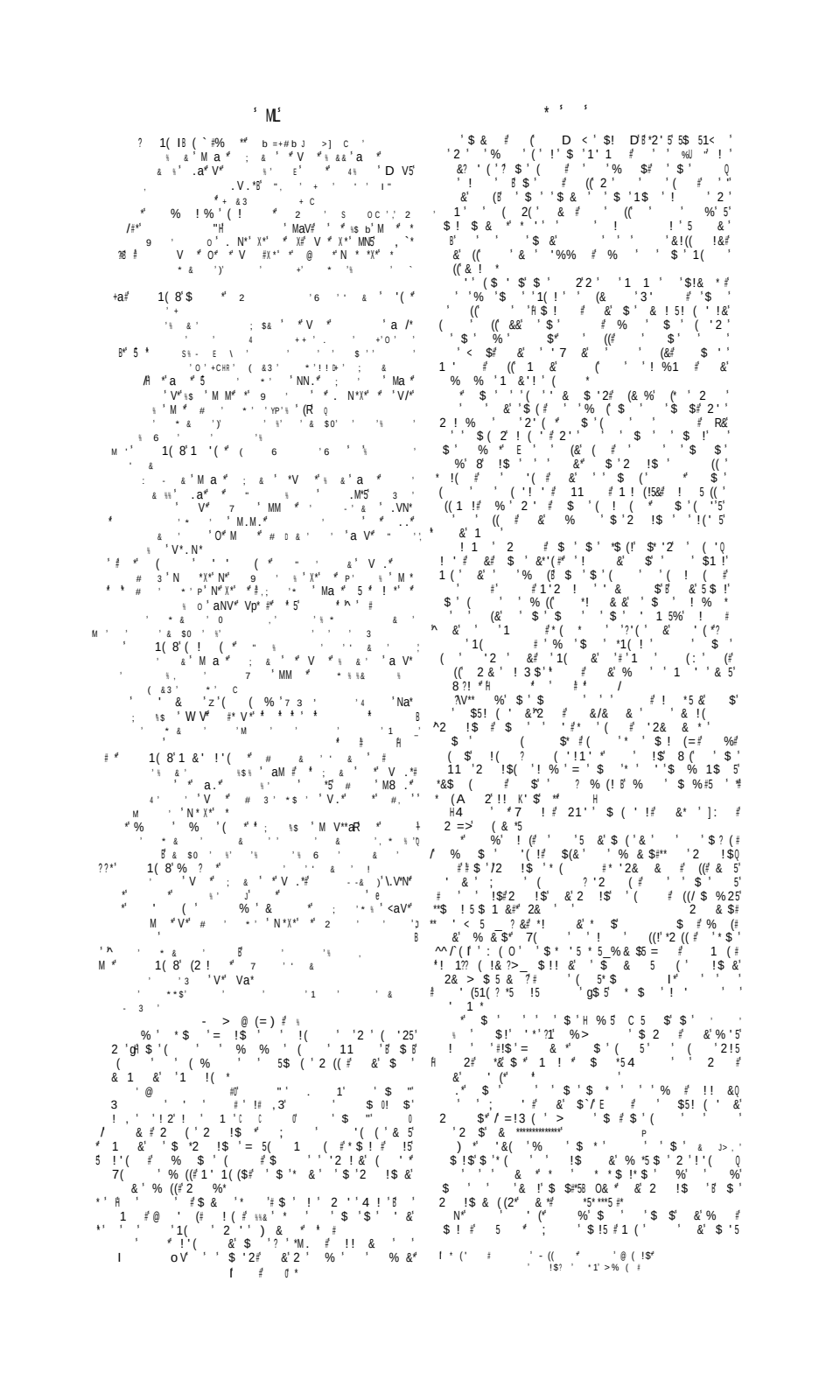

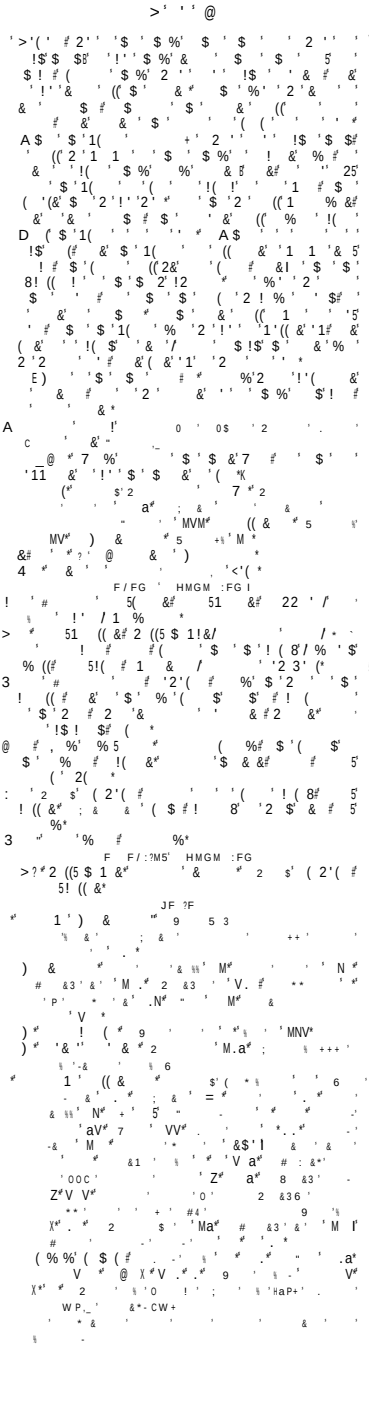

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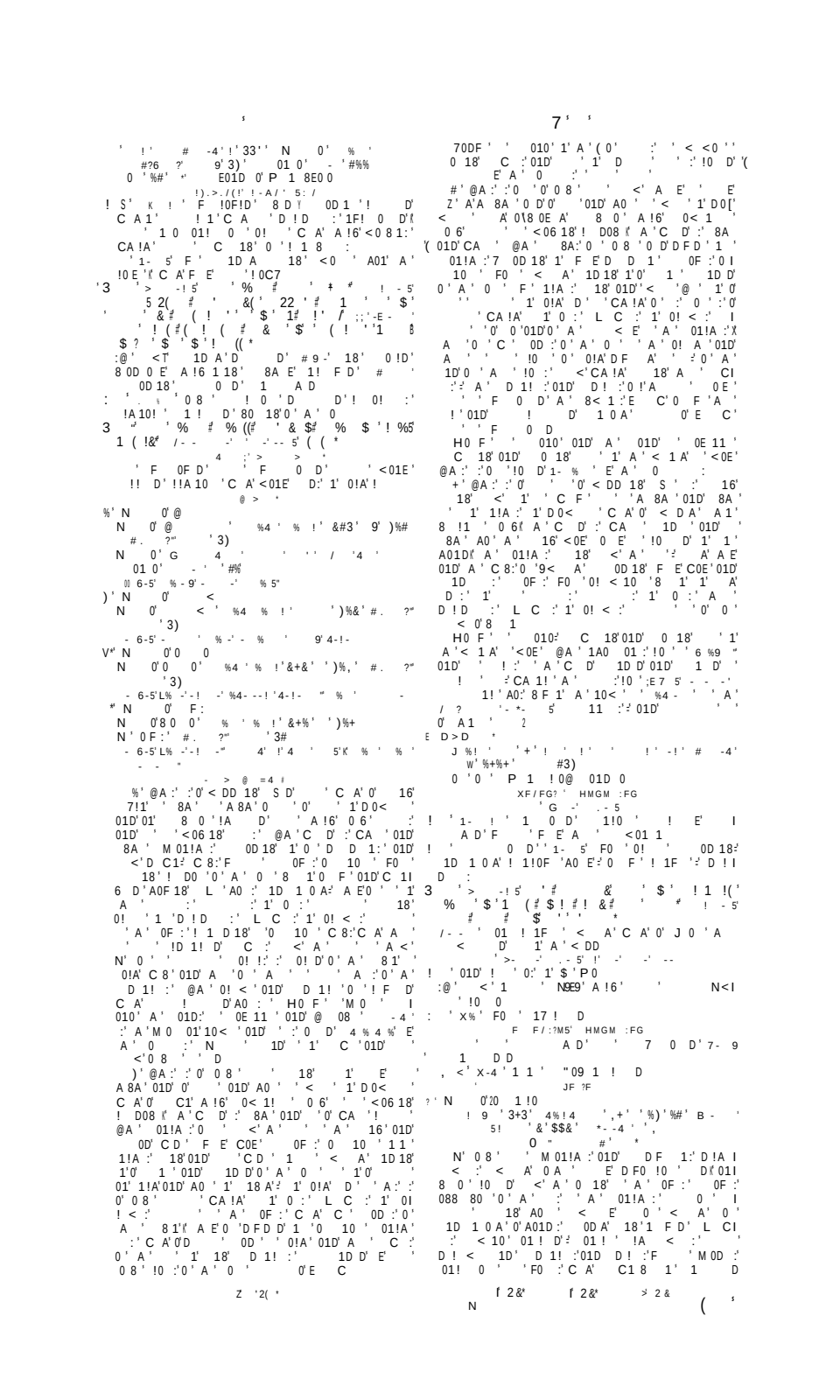

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A 0FE' 01D' < D' ' D' ' A :' A01'
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*Lin. gen.* 576. *Reich.* 626. *Schreb.* 784. *Juſſ.* 375.

Claſſ. 10. 4. Decandria Pentagynia. (Pentandria. *Lour.*)

Nat. ordet of *Gruinales*.—*Terebintaceæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved, erect, ſmall: *leaflets* lanceolate, permanent.

COR. *Petals* five, lanceolate, the lower part erect, the upper ſpreading.

STAM. *Filaments* ten, ſetaceous; alternately the length of the corolla, and ſhorter. *Anthers* roundiſh.

PIST. *Germ* oblong, obſcurely five-cornered. *Styles* five, ſetaceous, erect. *Stigmas* ſimple.

PER. *Pome* turbinate, five-cornered, five-celled.

SEEDS angular, ſeparated by membranes.

ESSENTIAL CHARACTER.

*Cal.* five-leaved. *Pet.* five, expanding above. *Pome* five-cornered, five-celled.

SPECIES.

1. Averrhoa Bilimbi.

*Lin. ſpec.* 613. *Reich.* 2. 375. *fl. zeyl.* 177. *Rumph. amb.* 1. 118. *t.* 36. *Rheed. mal.* 3. 55. *t.* 45, 46. *Raii hiſt.* 1449. 7. *Burm. zeyl.* 147. *ind.* 106. *Lour. cochinch.* 289.

*Trunk naked, fruit-bearing, pomes oblong, obtuſe-angled.*

2. Averrhoa Carambola.

*Lin. ſpec.* 613. *Reich.* 2. 375. *fl. zeyl.* 178. *Bauh. pin.* 433. *n.* 2. *Rumph. amb.* 1. 115. *t.* 35. *Rheed. mal.* 3. 51. *t.* 43, 44. *Raii hiſt.* 1449. *n.* 6. *Burm. zeyl.* 148. 2. *ind.* 106. *Lour. cochinch.* 288. *Philoſ. tranſ. vol.* 75. 2. *p.* 356.

*Axillas of the leaves fruit-bearing; pomes oblong, acute-angled.*

DESCRIPTIONS, *&c.*

Theſe are trees, natives only of India, and other warm parts of Aſia. Singular for the fruit growing frequently on the trunk itſelf, below the leaves. The flower reſembles that of Geranium; but the fruit is totally different. The leaves are alternate, unequally pinnate, with many pairs of leaflets. The flowers grow in racemes from the trunk or lower branches, but they are ſometimes axillary; their colour is red; they are ſmall, and the greater part is abortive. The fruit is a pome, five-celled, and containing many ſeeds.

1. This is only about eight feet in height, with few reclining branches. The leaves have ten pairs of leaflets and more: they are ſmall, ovate-lanceolate, quite entire, ſmooth, and grow on ſhort petioles. The flowers are red purple, on oblong ſmall racemes adhering to the trunk. Calyx five-cleft. The fruit is an oblong pome, the thickneſs of a finger, ſmooth on the outſide. Native of Goa, and many parts of India, both within and without the Ganges [a].

Burman deſcribes it as a beautiful tree, with green fleſhy fruit filled with a grateful acid juice; the ſubſtance and ſeeds not unlike thoſe of Cucumber; it grows from top to bottom, at all the knots and branches. They make a ſyrup of the juice, and a conſerve of the flowers, which are eſteemed excellent in fevers and bilious diſorders.

2. This is a tree above the middle ſize, with ſpreading branches, and a very cloſe head. The leaves have only about four pairs of leaflets, which are ovate, acuminate, quite entire, ſmooth, petioled, oppoſite, the upper ones largeſt. Flowers lateral, ſcattered, on ſhort racemes, uſually from the ſmaller branches, ſometimes from the larger ones, or the trunk itſelf. Calyx inferior, five-parted, upright, red. Corolla bell-ſhaped, petals oblong-ovate, variegated with purple and white. Stamens always five, ſhorter than the corolla, defended by the angles of the pentagon germ, fitting on the receptacle. Styles five, ſubulate, with obtuſe ſtigmas. Pome the ſize of a hen's egg, acutely five-cornered, five-celled, many-ſeeded; the rind is yellow, thin and ſmooth; the pulp clear, watery, in many ſweet, in others acid, with ſcarcely any ſmell. Seeds ſmall, oblong, angular, flatted and brown [b].

According to the obſervations of Dr. Bruce, the petals are connected by the lower part of the lamina, and in this way they fall off whilſt the claws are quite diſtinct. The ſtamens are in five pairs, placed in the angles of the germ; of each pair only one ſtamen is fertile, or furniſhed with an anther; the filaments are curved, adapted to the ſhape of the germ; they may be preſſed down gently, ſo as to remain, and then, when moved a little upwards, riſe with a ſpring; the fertile filaments are twice the length of the barren ones. Dr. Bruce gives a curious detailed account of the ſenſitive quality of the petioles and even branches of this tree [c].

Rheede relates, that the *Carambola* is twelve or fourteen feet in height, ſcarcely a foot in girth, with a rough brown bark: that it bears fruit three times a year, from the age of three to fifty: that the root, leaves and fruits are uſed medicinally, either alone, or with Areca or Betel leaves; that the latter, when ripe, are eſteemed delicious; unripe, are pickled; and that they are alſo uſed in dying and for other œconomical purpoſes [d].

Burman ſays, that the acid juice of this is not ſo pleaſant as that of the foregoing; that the fruit is rather larger, and is uſed for the ſame purpoſes; and that it is a very beautiful tree.

In Bengal they call it *Camrue* or *Camrunga*: in Malabar *Tamara-tonga*; the Bramins and Portugueſe call it *Carambola*; and the Dutch, *Vyfbocken*.

Both the ſpecies are now (1794) introduced into the royal botanic garden at Kew.

AVERRHOA acida. See *Cicca*.]

[AVICENNIA. *(In honour of the famous oriental phyſician Abu Ali Al Hoſſain Ebn Abdallah Ebn Sina, commonly called Avicenna; born at Bokkara in* 981. *He lived at Iſpahan, and died about* 1051; *or according to others in* 1036.)

*Lin. gen. n.* 1237. *Reich.* 855. *Schreb.* 1063. *Jacqu. amer.* 178. *t.* 112. *Juſſ.* 108.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Perſonatæ*. *Vitices* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, permanent: *leaflets* ſubovate, obtuſe, concave, erect; increaſed by three ſcales.

COR. monopetalous: *tube* bell-ſhaped, ſhort: *border* bilabiate; *upper lip* ſquare, emarginate, flat; *lower* trifid, diviſions ovate, equal, flat.

STAM. *Filaments* four, ſubulate, erect, the two front ones rather ſhorter, bent back to the upper lip. *Anthers* roundiſh, twin.

PIST. *Germ* ovate. *Style* ſubulate, erect, the length of the ſtamens. *Stigma* bifid, acute; the lower diviſion bent down.

PER. *Capſule* coriaceous, rhomboidal, compreſſed, one-celled, two-valved.

SEED one, large, the form of the capſule, conſtructed of four fleſhy folds, germinating.

ESSENTIAL CHARACTER.

*Cal.* five-parted. *Cor.* bilabiate; upper lip ſquare. *Capſ.* coriaceous, rhomboidal, one-ſeeded.

SPECIES.

1. Avicennia tomentoſa.

*Lin. ſyſt.* 579. *Reich.* 3. 200. *mat. med.* 158. *fl. zeyl.* 57. *Jacq. amer.* 178. *t.* 112. *f.* 2. *amer. pict.* 88. *t.* 261. *f.* 46. *Loeſl. hiſp.* 193. (Donatia.)]

Bontia germinans. *Lin. ſpec.* 891. *Mill. dict. n.* 2. *Brown. jam.* 263.

[Mangle. *Sloan. jam.* 2. 66. *Raii dehdr.* 115. *n.* 1.

Anacardium. *Bauh. pin.* 511. *Bauh. hiſt.* 1. 334.—orientale. *Pluk. alm.* 28.

Oepata. *Rheed. mal.* 4. 95. *t.* 45. *Raii hiſt.* 1566. *Leaves cordate-ovate, tomentoſe underneath.*

[a] Loureiro. [b] Philoſ. tranſ. [c] Hort. malab.

[2. Avicennia nitida.
*Lin. syſt.* 579. *Reich.* 3. 201. *Jacqu. amer.* 177. *t.* 112. *f.* 1. *pict.* 88. *t.* 169.
*Leaves lanceolate, ſhining on both ſides.*
3. Avicennia reſinifera.
*Forſt. eſcul.* 72. *ſtorul. n.* 246.
*Leaves ovate-lanceolate tomentoſe underneath.*

DESCRIPTIONS, *&c.*

1. This tree agrees moſtly with the Mangrove, riſing not above fifteen or ſixteen feet high; its trunk is not ſo large, having a ſmooth, whitiſh green bark; and from the ſtem are twigs propagating the tree, like that: the branches at top are jointed towards their ends here and there; where the leaves come out, oppoſite, on very ſmall petioles, two inches and a half long, one inch broad in the middle, ſmooth, ſoft, having one large rib of a dark green colour: the flowers are many at the top of the branches, white and tetrapetalous [a].

According to Jacquin, it grows to the height of twenty feet or more, and is of the ſame habit with the *nitida*.

It varies with acuminate leaves, more or leſs hoary underneath [b].

Native of the Eaſt and Weſt Indies. Dr. Patrick Browne ſays, that it is frequent near the ſea, both on the north and ſouth ſide of Jamaica, growing in low moiſt ground. This is not the Anacardium orientale of the ſhops, as has been ſuppoſed [c].

2. Height forty feet. Leaves ſharp, entire, oppoſite, three inches long, on ſhort petioles. Peduncles racemed, branching a little terminating. Flowers ſeſſile: corollas whitiſh, with the effigy of a brown ſtamen uſually impreſſed on the middle ſegment of the lower lip. The capſule opens as ſoon as it has fallen, but not on the tree. The creeping roots throw up abundance of ſuckers.

Native of Martinico [d].

3. The leaves of this tree are oppoſite, petioled, coriaceous, entire, ſharp, ſhining above, hoary with a very ſhort yellowiſh nap beneath, two inches long: petioles very ſhort, ſemicylindric, wrinkled on the outſide, from erect ſpreading. Peduncles terminating, ſubtrifid, loaded with a head of flowers. Native of New Zealand.

The green coloured gum, ſo much eſteemed by the natives of New Zealand, and which is very hot in the mouth, is ſuppoſed to be the produce of this tree [e].

AULAX. See *Protea*.
AURANTIUM. See *Citrus*.
AURELIANA. See *Panax*.
AURICULA Leporis. See *Buphthalmum*, and *Bupleurum*.
AURICULA MURIS. See *Arenaria*, *Ceraſtium*, *Hieracium*, *Myoſotis*, and *Silene*.
AURICULA URSI. See *Aretia*, *Primula*, *Dodecatheon*, and *Verbaſcum*.
AURICULARIA. See *Hedyotis*.
AWL-WORT. See *Subularia*.]

[AXYRIS.
*Lin. gen. n.* 1047. *Reich.* 1138. *Schreb.* 1409. *Juſſ.* 86. *Gærtn. t.* 128.
Claſs 21. 3. Monoecia Triandria.
Nat. order of *Holoraceæ.—Atriplices* Juſſ.

GENERIC CHARACTER.

* *Male flowers* in an ament.

CAL. *Perianth* three-parted, ſpreading, obtuſe.
COR. none.
STAM. *Filaments* three, capillary, ſpreading. *Anthers* roundiſh.

* *Female flowers* ſcattered.

CAL. *Perianth* five-leaved (two-leaved, *Syſt.*) concave, obtuſe, converging, permanent: the two outer leaflets ſhorter.
COR. none.
PIST. *Germ* roundiſh. *Styles* two, capillary. *Stigmas* acuminate.

PER. none. *Calyx* cloſely involving the ſeed with its three larger leaflets.
SEED one, ovate, compreſſed, obtuſe.
OBS. A. ceratoides. Linn. *conſtitutes a new genus between* Atriplex, Urtica, *and* Ceratocarpus. *It has therefore had the name of* Diotis *given it, and is to be placed after* Urtica *in the order* tetrandria *of this claſs* Monoecia.

ESSENTIAL CHARACTER.

MALE. *Cal.* three-parted. *Cor.* none.
FEM. *Cal.* two-leaved. *Cor.* none. *Styles* two. *Seed* one.

SPECIES.

1. Axyris amaranthoides. *Simple-ſpiked Axyris.*
*Lin. ſpec.* 1389. *Syſt.* 846. *Reich.* 4. 116. *amæn.* 3. 24. *Gmel. ſib.* 3. 21. *t.* 2. *f.* 2. & *t.* 3.
*Leaves ovate, ſtem erect, ſpikes ſimple.*
2. Axyris hybrida.
*Lin. ſpec.* 1390. *Reich.* 4. 117. *amæn.* 3. 24. *Gmel. ſib.* 3. 23. *n.* 12. *t.* 4. *f.* 1.
*Leaves ovate, ſtem erect, ſpikes conglomerate.*
3. Axyris proſtrata.
*Lin. ſpec.* 1390. *Reich.* 4. 117. *amæn.* 3. 25. *Zinn. goett.* 35. *Gmel. ſib.* 3. 24. *t.* 4. *f.* 2.
*Leaves obovate, ſtem ſubdivided, flowers capitated.*

DESCRIPTIONS, *&c.*

1. Leaves rugged with ſtellate hairs. Fruit-bearing branches naked for a long way at the baſe. Spike very ſmall, ſubſeſſile, quite ſimple, terminating the branches [a]. Gmelin obſerves, that the calyx of the female flowers is two or three-leaved. It was cultivated in 1758, by Mr. Miller [b].

2. This much reſembles the foregoing ſort, from which however it differs in the ſpike of flowers being on long peduncles, conglomerate, or directed the ſame way, twiſted, with the fruit-bearing branches crowded cloſe to the ſtem, and the leaves more rough [c]. According to Gmelin, the calyx of the female flowers is three-leaved, and there is one ſtyle. Pallas ſuppoſes this to be only a variety of the former ſort.

3. Stem much branched, ſix or ſeven inches high, diffuſed. Leaves petioled. Flowers conglomerate at the ends of the branches, with numerous leaflets among them [d]. According to Gmelin, the calyx of the female flowers is three-leaved.

All theſe are annual plants, natives of Siberia.
AXYRIS ceratoides. See *Diotis*.]

AYENIA. (*Given in honour of the Duke D'Ayen, Duke and Marechalle de Noailles, a great promoter of the ſcience of Botany, who had a noble garden at St. Germain en Laye.*)
*Lin. gen.* 1020. *Reich.* 1108. *Schreb.* 367. *Gærtn.* 79. *Juſſ.* 278. D'Ayenia. *Mill. dict.*
Claſs 20. 4. Gynandria Pentandria.
Claſs 5. 1. Pentandria Monogynia. *Schreb.*
Nat. order of *Columniferæ. Malvaceæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted: *parts* ovate-oblong, acute, coloured in the middle, reflex, withering.
COR. pentapetalous; *petals* five united at the top to the nectary into a flat ſtar: *claws* capillary, very long, bowed outward: *borders* obcordate, reſupinate, with a clubbed point at the top turned upward.—*Nectary* bell-ſhaped, ſitting on a cylindric, erect column, ſhorter than the calyx: *border* five-lobed, *lobes* elevated, above flattiſh with a longitudinal furrow, excavated underneath, and ſharp.
STAM. *Filaments* five, very ſhort, inſerted into the margin of the nectary, on the top of the ribs, between the diviſions of the border, each bent downwards archwiſe through a notch at the end of each petal. *Anthers* roundiſh, under the borders of the petals.
PIST. *Germ* roundiſh, five-cornered, at the bottom of the nectary. *Style* cylindric. *Stigma* obtuſe, five-lobed.
PER. *Capſule* five-grained, roundiſh, muricate, five-celled, ten-valved, elaſtic.

[a] Sloane. [b] Swartz. obſ. 248. [c] Jacquin. [d] Ibid. [e] Forſter eſcul.

[a] Linnæus. [b] Hort. kew. [c] Linn. [d] Ibid.

Seeds ſolitary, rather oblong, gibbous on one ſide, angular on the other.

Obs. *If the petals be carefully ſeparated from the nectary by a needle, this ſtrange flower appears more natural.—The character is taken from the firſt ſpecies; the others are leſs known in Europe.*

ESSENTIAL CHARACTER.

Monogynous. *Cal.* five-leaved. *Pet.* united into a ſtar, with long claws. *Anthers* five, under the ſtar. *Capſ.* five-celled.

SPECIES.

1. Ayenia puſilla. *Smooth Ayenia.*
*Lin. ſpec.* 1354. *ſyſt.* 821. *Reich.* 4. 45. *Act. Stockh.* 1756. *p.* 23. *t.* 2. *Loeſl. it.* 200. *Gærtn. fruct.* 1. 383.

D'Ayenia. *Mill. dict.* — *fig. t.* 118.

Urticæ folio anomala, &c. *Sloan. jam.* 1. 209. *t.* 132. *f.* 2.

*Leaves cordate, ſmooth.*

[2. Ayenia tomentoſa.
*Lin. ſpec.* 1354. *Reich.* 4. 46. *Loeſl. it.* 200.
*Leaves ovate-roundiſh, tomentoſe.*

3. Ayenia magna.
*Lin. ſpec.* 1354. *Reich.* 4. 46. *Loeſl. it.* 199. *Jacqu. amer. pict. p.* 112.
*Leaves cordate, pubeſcent; germ of the flowers ſeſſile.*]

4. Ayenia lævigata.
*Swartz prodr.* 97.
*Leaves ovate entire very ſmooth, germ pedicelled, nectary ten-cleft radiated.*

DESCRIPTIONS, *&c.*

1. This has a weak woody ſtem, dividing into ſeveral ſlender branches, and riſing from nine inches to a foot high. Leaves ſlightly indented on their edges, on pretty long footſtalks, of a lucid green, ending in acute points, and placed alternately. At the baſe of each footſtalk, from the ſide of the branches, come out two, three or four flowers from the ſame point, each on a ſeparate ſlender peduncle. Corolla purple, tubulous, ſpreading open at the top into five acute ſegments, each terminated by a ſlender tail. [Capſule compound, raiſed above the calyx on a briſtle-ſhaped peduncle; it is rounded five-cornered; the five grains of which it is compoſed are ovate, convex on one ſide, muricated with little ſoft prickles, on the other ſide angular; they are one-celled, two-valved, and open with a ſpring. The common receptacle is filiform, in the axis of the fruit; the proper receptacle is a little ſcar in the inner angle of the grains, to which the ſeeds are fixed. Theſe are ſolitary, ſhaped like grape-ſtones, mucronate at the tip, retuſe at the baſe, gibbous on one ſide, on the other ſlightly angular and marked with a depreſſed longitudinal line, rugged all over with raiſed dots, and of a very dark brown colour: they have two coverings: the outer cruſtaceous, thick, brittle; the inner membranaceous and pale; there is no albumen, but the whole conſiſts of an inverted, yellow embryo; the cotyledons or ſeed-lobes are rounded, two-lobed, foliaceous, rolled ſpirally about the radicle, which is fuſiform, ſtraight, and ſuperior[a].

Many of the flowers being abortive, Linneus ſuggeſts that they may poſſibly be of different ſexes.]

Native of Peru, whence the ſeeds were ſent by the younger Juſſieu to Paris. Mr. Miller received them (about the year 1756) from Dr. Monier, intendant of the Duc D'Ayen's garden; and the plants flowered and perfected ſeeds annually in Chelſea garden. The flowers continue in ſucceſſion on the ſame plants from july to winter.

[2. Leaflets of the calyx lanceolate, acute, permanent. Corolla without petals, but compoſed of a one-leafed, bell-ſhaped nectary, with a five-cleft margin. Stamens on the outſide of the nectary, longer than the calyx, bowed, bent in, and fixed by a broad membranous tip to the edge of the nectary: anthers three. Native of South America[b].

[a] Gærtner. [b] Loefling.

3. An upright ſhrub, five feet high. Leaves acuminate, ſerrate, alternate, three or four inches long, on a tomentoſe petiole, almoſt two inches in length. Peduncles axillary, moſtly in fours, three-flowered, ſhort. Flowers ſmall, herbaceous, by no means gynandrous. Native of Carthagena, and other places in South America[a].

4. Native of Jamaica[b].]

PROPAGATION AND CULTURE.

Theſe plants are propagated by ſeeds, ſown upon a moderate hotbed early in the ſpring: when they come up, and have four leaves, they ſhould be tranſplanted on a freſh hotbed to bring them forward: part of them may be planted in ſmall pots, and the others on the bed: thoſe in the pots ſhould be plunged into a hotbed of tanner's bark; they muſt be ſhaded till they have taken new root, then they muſt have free air admitted to them every day, in proportion to the warmth of the ſeaſon; they require to be frequently watered in warm weather, but they ſhould not have it in too great plenty. The plants ſhould continue all the ſummer in the hotbed, where they muſt have a good ſhare of air; for thoſe which are fully expoſed to the open air will not thrive, and if they be too much drawn, they do not flower well. The plants will live through the winter in a moderate ſtove, but as they perfect their ſeeds well the firſt year, few perſons care to continue the old plants.

Azadarichta. See *Melia.*

Azalea. (ἀζαλεος, dry: from its growing in a dry ſoil.)
*Lin. gen.* 212. *Reich.* 226. *Schreb.* 277. *Gærtn.* 63. *Juſſ.* 158.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Bicornes.—Rhododendra* Juſſ.

GENERIC CHARACTER.

Cal. *Perianth* five-parted, acute, erect, ſmall, coloured, permanent.

Cor. monopetalous, bell-ſhaped, ſemiquinquefid; the ſides of the diviſions bent in.

Stam. *Filaments* five, filiform, inſerted into the receptacle, free. *Anthers* ſimple.

Pist. *Germ* roundiſh. *Style* filiform, the length of the corolla, permanent. *Stigma* obtuſe.

Per. *Capſule* roundiſh, five-celled, five-valved.

Seeds many, roundiſh.

Obs. *The corolla in ſome ſpecies is funnel-ſhaped, in others bell-ſhaped; the ſtamens in ſome declining and very long. It principally differs from* Rhododendron *in the number of its ſtamens.*

ESSENTIAL CHARACTER.

*Cor.* bell-ſhaped. *Stam.* inſerted into the receptacle. *Capſ.* five-celled.

SPECIES.

[1. Azalea pontica. *Pontic Azalea.*
*Lin. ſpec.* 1669. *ſyſt.* 198. *Reich.* 427.
A. arborea. *Liu. ſpec. edit.* 1. 150.
Chamærhododendros pontica, &c. *Tourn. cor.* 42. *act. par.* 1704. *Bauh. cent.* 5. 36. *t.* 69.
*Leaves ſhining, lanceolate, ſmooth on both ſides, racemes terminal.*

2. Azalea indica. *Indian Azalea.*
*Lin. ſpec.* 214. *Reich.* 428. *Thunb. jap.* 84.
Cham. exoticum, &c. *Breyn. prodr.* 1. 24.
Ciſtus indicus, &c. *Herm. lugdb.* 152. *t.* 153. *Raii hiſt.* 1895.
Tſutſuſi. *Kæmpf. amæn.* 845. *t.* 846.
*Flowers ſubſolitary, calyxes hairy.*]

3. Azalea nudiflora. *Naked-flowered Azalea.*
*Lin. ſpec.* 214. *Reich.* 428. *hort. cliff.* 69. *Kalm. it.* 3. 110. *eng. edit.* 2. 169. *Dubam. arb.* 1. 160. *Mill. dict. n.* 2. *Gron. virg.* 21. *Trew. ehr. p.* 16. 48. *Cold. novebor.* 25.
Ciſtus virgin. periclymeni flore ampliori minus odorato. *Pluk. mant.* 49.
α. A. coccinea. *Deep ſcarlet Azalea.*
*Curt. mag. t.* 180.
β. A. rutilans. *Deep red Azalea.*
*Calyxes minute.*

[a] Jacquin. [b] Swartz.

γ. A.

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0F :' ' F ' ! '01D' F 8 1 ' M 0 '
8A D' C :' ! F ' A ' CA ' 0 ' '
A ' ' H0 F ' ' A ' 0 1D :' P !A'! I
F0 D' 1'?0 01' ' A ' 801 ! ' ' :' C :' 01D'
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#' @A :' 1' :' 10 F '! 1 E' J 1 E' :' '
A ' A 8A ' ' 1' ' ' 1' 18 01D' :' 1 F '
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18' 01D' 106 D' 18'0'! ' ' D' C :'
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' F E' D' ! :' E'D 8 :' A ' 1' 0!A :'
A < ' @A ' 0 ' < ' F0 :' 1' A ' 80 D 1 :'
D 1' 06 :' 'E C' C :' ' A0' :' 0I
E' 0' < 06 :' < ' ' A A :' 1' A ' 10 F '
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' A E' C D' C ' M ' CA 1' A E' 0 ' 1' '
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D' ' A ' D' 01 :' ' C ' F ' A <' 1'
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& ' ,' N ' C' 01 :' ' ' 0 E' 01D' 8 C'
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< !A' 1' 0' 0 ' ' <0 E' @A ' :' ' A ' D 6'
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' A ' ! :' A !D' ' 0' A ' D :' < E' 01D'
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D C1' 0 18' C ! ' 0:' 18' 0:' A ' D' !0 ! E'
A D' &
H0 F ' ' N < !0' ' C0:' ! F0 D' 1' %,',' 1'
A ' 01 !' 80 D 1' 0' A 0' :' 01D' C :' 1' 2 E'
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)' @A :' A0:' 0' ' A E' 0 6' CA !A' :' '
A ' A 8A ' ' 8A ' ' 1' ' 18' ' D '
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' D ' @A ' C :' 0 !' D ! D' 0' A ' I
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01D' 0 ' 1 ' !! !D!D' E' D:' 1' 18 01D'
11 :' 0E:' A0 ' 8 C:' ' C ! ' A ' A 8A '
' 0' <01' 1' ' 80 D 1:' A0' A ' <' :' 88 D'
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! < 9 0 ' ' A' 1D:' 1D 18' 1' A ' :' 01D' T 1'D C1'0 ' A ' D8
2 ' 5 8A' A ' :' 16' A A ! 61 :' ' A ' A < 01'0 < ' 01D' A ' 0 8 ' ' A ' 8 1 :' 0F :' 0 10 ' 0! ' 8A A' 1 ' < ! 1 2 0' A01D' 0D A' 18' 0 D' A0 '0:' C D ' @A ' ! 2 1 0 ' ! E< ' ' A ' 01! A :' 01 ! D' ' ' F 1' 1! A :' 1' 18 A' 01D' 0D A ' 0 8 0 ' 0 E ' 8 ' ' ! E' < ! 0 ' C A' 0C 0 D' ! 0 :' G C1' ! @ ' A 0 E' 0 8 0 ! ' C ! ' A ' 18 A' ' A ' ! 0 E ' D:' 06 D ' Q F D' 1' C D:' 1' A ' 01D' '? A0110 ' E ' ; 1 8
+ ' @A :' :' 0' A 0! :' 6 1D' ' A ' ' F 1' ' 8A' ' A 8 A ' 0F :' < 01E' 6 ' A ' ' ' ' ' ' 8 0 E' ' 1' A ' 01! A :' L C :' ! CD D' 106 D ' 0 ' A ' 1D' ' A ' C 8 :' 7 ' @A ! '0 ' 1 'F E' 0 ' ' A ' 0F :' ! 1 ! ' 1 18' 8 1' A 8A' A ' E 0 ' A0 :' ! ! 0 1 1D' A :' A ' ' ' 0D < D' 1 ' < 01E ' ! :' 80 D 1 :' ' :' 0' 10 F ' ' " 8 1 0' 01D' A ' 0 :' 'H A' N < ! 0' :' 01D' D C :' 1' ! ' 'C0 :' ! F0 D' 1' %,33' E' M ' < 1
&' <:' E' ' 'A 8A ' C 06 ' 0 'A0 E' < ! A' 01! A 18' 01 ' 0F :' 0 10 'A0 ' ! < ! 0 18' D E' 1D 1 D' 0 ' A ' 0 ' ' 01 ! :' < 0 ' 0 < 18' A ' 0 < ! 0 1 :' 0 E ' A ' A 01' A ' C ' 50 D' ! 0 :' 0C ! D' L < 0 ' :' < 01E ' CA A' 1D ' 106 D' ! A I < 0 A D :' 1' A ' D ! ' F ' ' ! E ' ' A ' I < 0 :' D ! D C1' < ' 01D 18' ' ' :' C 18 E' 10 < D' M0 ! ! A0 :' 'G D :'
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! :' 01D' <0E' A0 :' '1 A 18' < '!A01' 0' E 18'
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' <' 0 < 1 ' ! < 18'-' 01!A :' 1D'
C A' 0' CA A' 0 6' < CA0' 8A' 0F :'
J ' 1 ' 8 0 ! :' 1' ' :' D 1!
! :' A ' 0D D' 0 E ' F 0 D' A0 ' C0E'
D C1' 0' ' L 0< 1 :' ' J 0 '
E :' ' L :' < CA0 ''C DE' 01D' < 1 '
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0 !' 1 ' C A' 0' 10 ' ' CE' CA 1 :' 0 '
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61 C1' ! :' 18' A ' 1!A :' 18' ' A E' 0 !'
1' A A0 ' '0' 0 ' 1F D' C DE' F E' A !6 '
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, ' @A ' 0F :' 0 ' ! E' !E 1D !0 '0 ' C '
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8 80 ' 1' A ' 1 DD ' ' A ' 01!A :' 0 :'
01' 1 !A' 18' F0 8 0 ' C DE' A !6 ' 1 '
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' 01 F ' C 1D 18' 1 :' F0 80 D' A C10 < '
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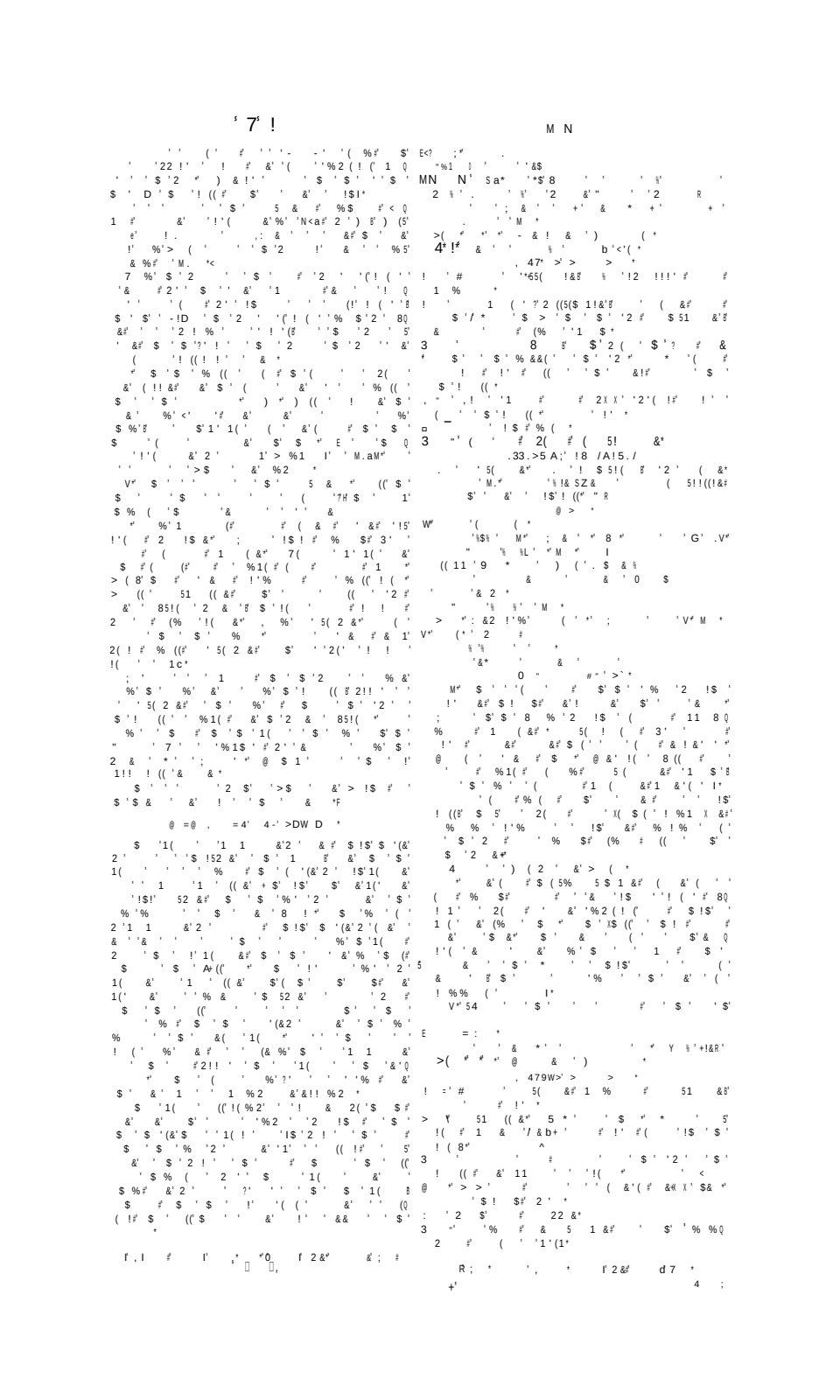

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Canſchena-pou. *Rheed. mal.* 1. 63. *t.* 35. *Raii hiſt.* 1752.
*Leaves cordate, lobes ſemiorbiculate tomentoſe.*

8. Bauhinia acuminata. *Sharp-leaved Mountain Ebony. Lin. ſpec.* 536. *Reich.* 2. 247. *hort. cliff.* 157. *n.* 5. *fl. zeyl.* 148.
Velutta-mandaru. *Rheed. mal.* 1. 61. *t.* 34. *Raii hiſt.* 1751. 3.
*Leaves ovate, lobes acuminate ſemiovate.*

9. Bauhinia emarginata.
*Mill. dict. n.* 5.
B. aculeata fol. rotundo emarginato, fl. magno albo. *Houſt.*
*Stem prickly, leaves cordate with round lobes, tomentoſe underneath.*

10. Bauhinia rotundata.
*Mill. dict. n.* 7.
B. acul. fol. ſubrotundis bicornibus, fl. magno albo. *Houſt.*
*Stem prickly, leaves ſubcordate two-parted rounded, flowers ſcattered.*

11. Bauhinia aurita. *Long-eared Mountain Ebony. Ait. hort. kew.* 2. 48. *Mill. fig.* 41. *t.* 61.
B. divaricata β. *Lin. ſpec.* 535.
*Leaves ſubtranſverſe at the baſe, lobes lanceolate porrected three-nerved; petals lanceolate.*

[12. Bauhinia porrecta. *Smooth broad-leaved Mountain Ebony.*
*Swartz. prodr.* 66. *Ait. hort. kew.* 2. 48. *Plum. gen.* 23. *ic.* 32. *t.* 44. *f.* 2. *Brown. jam.* 286. 1. *Sloan. jam.* 2. 51. (Senna.)
*Leaves cordate, lobes porrected acute three-nerved, petals lanceolate.*

13. Bauhinia candida. *White-leaved Mountain Ebony. Ait. hort. kew.* 2. 49.
*Leaves cordate pubeſcent underneath, lobes ovate obtuſe; calyxes attenuated upwards and elongated.*

DESCRIPTIONS, *&c.*

The Bauhinias are trees or ſhrubs, ſome of them climbing. The leaves are ſimple, but two-lobed or two-parted, which circumſtance gave occaſion to Plumier to name this genus from the two famous brothers. The flowers are in ſpikes or racemes, either axillary or terminating.]

1. This riſes with many ſlender ſtalks, which put out tendrils, and faſten themſelves to the neighbouring trees, whereby they riſe to a great height. Leaves alternate, heart-ſhaped, on long footſtalks; they are ſix inches long, and three inches and a half broad in the middle, and are deeply cut into two pointed lobes, each having three prominent ribs running longitudinally. It is native of both Indies, and has not produced flowers in England. The ſeeds were ſent to Mr. Miller from Campeachy, [probably before the year 1752.

The flowers are at firſt whitiſh, but turn to a yellowiſh colour. They ſeem to appear but ſeldom even in their place of natural growth. The fruit is ſlender and flat, half a foot or a palm in length, and an inch in breadth, hard, ſmooth, very dark brown; it contains ſix or eight flat bony ſeeds, black with a ſilvery border [a].

2. This is an erect inelegant ſhrub, the height of a man. The trunk and branches are very prickly. Leaves roundiſh; the two lobes alſo are roundiſh and blunt. The flowers are large, white, and have a ſcent which is ſomewhat unpleaſant. Sometimes the fold of the calyx is entire, not cloven [b].

Linneus adds, that the leaves are cloven to one-third of their depth, that they are ſmooth, have nine nerves, and a very ſmall thread from the diviſion of the leaf, that the petiole is thicker and callous at both ends, and that there is one ſtrong ſharp ſhort prickle at the baſe of the petiole on each ſide, from the top of which, when young, nectareous drops diſtil [c].]

Mr. Miller ſays, that it riſes to the height of ſixteen or eighteen feet, in Jamaica, where it grows plentifully, and the other ſugar iſlands in America; that the ſtalks are terminated by ſeveral long ſpikes of yellow flowers, which are ſucceeded by bordered pods, about three inches long, containing two or three ſwelling ſeeds; that theſe pods are glutinous, and have a ſtrong balſamic ſcent, as have alſo the leaves when bruiſed; and that it is called in America, the Indian Savin-tree, from its ſtrong odour, ſomewhat reſembling the common Savin.

[According to Jacquin, it is frequent about Carthagena in woods. It was cultivated by Mr. Miller, in 1752 [d].]

3. This is a low ſhrub, ſeldom riſing more than five or ſix feet high, dividing into ſeveral branches. [The ſtem is ſtraight and unarmed, except that it has two reflex prickles at the origin of the branches, ſo ſmall as to be ſcarcely viſible. Leaves cordate, five-nerved, cloven half way, with the lobes ſtanding very wide from each other, whence the trivial name. Flowers in a ſimple upright raceme. Corolla white [e].] They have a very agreeable ſcent, appear moſt part of the ſummer, and are one of the greateſt beauties of the hot-houſe. The pods are taper, about four inches long, and contain four or five dark-coloured ſeeds. It grows naturally in great plenty on the north ſide of the iſland of Jamaica. [Cultivated before 1742, by Robert James Lord Petre. It flowers from june to ſeptember [f].

4. This differs from the others in having the leaves more oblong, entire and not at all emarginate at the baſe, cloven to the middle into two ſtraight parallel lobes, and having nine nerves, the outmoſt of which are very ſmall. The calyx is very long, ſtreaked and of a gray colour; the petals are ſubulate: ſtamens alternately ſhorter; legume very long, pendulous [g].]

It riſes to the height of twenty feet, with a ſmooth ſtem, dividing into many ſmall branches; which are terminated by looſe bunches of white flowers; and theſe are ſucceeded by very long narrow compreſſed pods, with eight or ten ſeeds in each. Native of America; Mr. Miller ſays, that he received the ſeeds from Campeachy.

5. This riſes with a ſtrong ſtem, upwards of twenty feet high, dividing into many ſtrong branches. The flowers are large, and grow in looſe panicles at the extremity of the branches, of a purpliſh red colour, marked with white, and the bottom yellow. The pods are about ſix inches long, and three quarters of an inch broad, containing three or four compreſſed ſeeds in each. It grows naturally in both Indies: [and was introduced here in 1690, by Mr. Bentiek [h].

6. This alſo is a tall tree, but differing from the foregoing ſort in having larger leaves, more deeply cut, and a little more contracted on the ſides. In the flowers, the calyx is yellowiſh green and red; the corolla is of a very red purple, and one petal out of the five is ſtreaked with white on the claw both within and without [i]; they are all lanceolate and diſtant [k]. The legumes are larger than thoſe of any other ſort, being one and a half or two ſpans in length, and an inch in breadth [l]. Native of the Eaſt-Indies, where it flowers the whole year. Mr. Miller affirms, that it grows naturally at La Vera Cruz; but he ſeems to have miſtaken the ſpecies. It was introduced here in 1778 [m].

7. This grows to the height of two fathoms, with a trunk nearly ſix inches in diameter, and divides into many branches. The leaves are much ſmaller than in the foregoing ſpecies [n]; they are rounded, cloven half way, ſeven-nerved and blunt, with the lobes rounded and almoſt upright [o]; they have a ſtrong ſcent, eſpecially if rubbed during the night, when the lobes are clapped together. The flowers have a green calyx, and a bell-ſhaped, yelloviſh-white corolla; one of the petals has a duſky red-purple ſpot at the claw, reſembling a little ſharp-pointed leaf. Stamens yelloviſh-white. The flowers have no ſmell [p].

[a] Rumphius. [b] Jacquin. [c] Hort. cliff. [d] Hort. kew. [e] Hort. cliff. [f] Hort. kew. [g] Hort. cliff. [h] Hort. kew. [i] Hort. malab. [k] Linn. [l] Hort. malab. [m] Hort. kew. [n] Hort. malab. [o] Linn. [p] Hort. malab.

Native

Native of the Eaſt-Indies.] Mr. Miller ſays, that it was ſent him from Campeachy in 1730, by the late Dr. Houſtoun: [but he ſeems again to confound the ſpecies. It was cultivated, according to Ray, by Compton Biſhop of London, in 1687.

8. This is only about the height of a man, with a trunk the thickneſs of the human arm. The leaves are more deeply cut, longer, contracted into a cuſp or point towards the end, nine-nerved, leſs divaricated. The flowers are bell-ſhaped, of a very pure white without any ſpots, void of ſcent; the petals are rounded and quite blunt. Stamens white [a]; in this and the third ſpecies diadelphous the contrary way to what they are in the papilionaceous flowers [b]. Legumes ſmaller than in the others, being only four or five inches in length; they are an inch broad, ſmooth, a little bent on one ſide, with a round broad back [c].

Native of the Eaſt-Indies. Mr. Miller ſays, it grows naturally in both Indies, but he has confounded this with the twelfth ſpecies.]

9. This ſeldom riſes more than ten feet high, dividing into many irregular branches, armed with ſhort crooked ſpines; the leaves grow alternate, are heart-ſhaped, and have two roundiſh lobes; they are woolly on their under ſide, and have ſhort foot-ſtalks. The flowers grow at the extremity of the branches, two or three together: theſe are large, and of a dirty white colour, and are ſucceeded by ſhort flat pods, each containing two or three ſeeds.

10. This riſes twenty feet high, with a ſtrong upright ſtem, which ſends out many branches toward the top; armed with ſpines growing by pairs, which are ſtrong and crooked. The leaves are heart-ſhaped and grow alternately, having two rounded lobes. The flowers are large and white, coming out thinly at the ends of the branches. The petals of theſe are near two inches long, and ſpread open wide; the ſtamens and ſtyle are nearly of the ſame length. The flowers are ſucceeded by long flat pods, which are narrow, each containing five or ſix ſeeds.

Both theſe are natives of Carthagena in New Spain. [I give them on Mr. Miller's authority; but they are nothing more than varieties of the ſecond ſpecies.]

11. This ſort approaches near to the *B. non aculeata, folio ampliori & bicorni* of Plumier, (B. porrecta, n. 12.) but the lobes of the leaves are much longer, nor are the flowers ſo large as in his plant, which is figured in *Hort. malab.* by the title of *Velutta-Maudaru*, and is *B. acuminata* of Linneus n. 8.[d]

[It was cultivated in 1756, by Mr. Miller, and flowers in ſeptember [e].

12. This tree riſes to about fifteen feet in height, having ſeveral ſtraight trunks about the thickneſs of a man's leg, covered with a whitiſh bark, dividing into many branches and twigs, making a pleaſant top. The leaves are three inches long, and two broad in their broadeſt part, yellowiſh green, ſmooth, thin, having ſeven or more ribs, with ſome tranſverſe ones, making the whole very nervous; the petioles are an inch long. The flowers come out at the ends of the twigs ſeveral together, on pedicels half an inch in length: petals long, red white variegated or ſtriated: ſtamens long and white. Legumes five or ſix inches in length, brown. It grows on the hills every where in Jamaica. The wood is very hard, and veined with black, whence the name of Ebony [f].

It was cultivated by Mr. Miller in 1739, and flowers in july [g].

13. This is a native of the Eaſt-Indies, where it was obſerved by Claude Ruſſel, Eſq. It was introduced in 1777, by Patrick Ruſſel, M. D. and flowers in may and june [h].

The proper place of the eleventh ſpecies is after the third, of which it was ſuppoſed by Linneus to be only a variety. The twelfth ſhould come in between the ſeventh and eighth. The fifth, thirteenth, and ſixth ſhould be placed after the eighth. The ninth and tenth may be referred, as varieties, to the ſecond. There are many other ſpecies both from the Eaſt and Weſt Indies, not yet ſufficiently determined. The whole genus indeed requires to be ſtudied anew, in order to eſtabliſh the ſpecies on better principles than we poſſeſs at preſent.]

PROPAGATION AND CULTURE.

All theſe plants being natives of hot countries, will not thrive in England, unleſs they are kept in the bark-ſtove. They are propagated by ſeeds, which muſt be procured from the countries where they grow naturally, for they do not perfect their ſeeds in England.

The third ſort has ſeveral times produced pods in the Chelſea garden, but they have never come to maturity. The ſeeds ſhould be brought over in their pods, which will preſerve them good. Theſe muſt be ſown in pots filled with light freſh earth, and plunged into a moderate hot-bed of tanners-bark; if the ſeeds are good, the plants will come up in about ſix weeks, and in a month after, will be fit to tranſplant, when they ſhould be carefully ſhaken out of the ſeed pot, ſo as not to tear off the roots, and each planted into a ſeparate ſmall pot filled with light loamy earth, and plunged into the hot-bed again, being careful to ſhade them until they have taken freſh root, after which they ſhould have freſh air admitted to them every day in warm weather. In the autumn they muſt be placed in the bark-ſtove, and treated in the ſame way as other tender exotics, giving them but little water in winter. As theſe plants frequently flower, they are worthy of a place in the ſtove.

[BAWD-MONEY. See *Æthuſa Meum.*]

BAY. See *Laurus.*

[BAY, Loblolly. See *Gordonia.*

BEAD-TREE. See *Melia.*

BEAM-TREE. See *Cratægus Aria.*]

BEAN. See *Vicia Faba.*

——, Kidney or French. See *Phaſeolus.*

[BEAN-CAPER. See *Zygophyllum.*]

BEAN-TREFOIL. See *Anagyris* and *Cytiſus.*

[BEAR-BERRY. See *Arbutus.*

BEAR'S-BREECH. See *Acanthus.*

BEAR'S-EAR. See *Primula Auricula.*]

——— Sanicle. See *Verbaſcum.*

BEAR'S-FOOT. See *Helleborus.*

BECABUNGA. See *Veronica.*

BEE-FLOWER, or Orchis. See *Ophrys:*

BEECH-TREE. See *Fagus.*

BEET. See *Beta.*

BEFARIA. See *Bejaria.*

[BEGONIA. (*So named by Plumier, from Monſ. Begon* [i].)

*Lin. gen. n.* 1156. *Reich.* 1165. *Schreb.* 1442. *Dryander in Linn. tranſact.* 1. 158. *Tournef. inſt. t.* 442. *Gærtn. fruct. t.* 31. *Juſſ. gen.* 436.

Claſſ. 21. 8. Monoecia Polyandria.

Nat. order of *Holoraceæ.—Incertæ* Juſſ.

GENERIC CHARACTER.

* *Male flowers.*

CAL. none.

COR. *Petals* four (in *B. octopetala* ſix to nine.), of which two oppoſite ones are larger, commonly roundiſh (in *B. ferruginea* all nearly equal, oblong.)

STAM. *Filaments* numerous (fifteen to one hundred) inſerted into the receptacle, very ſhort, ſometimes united at the baſe. *Anthers* oblong, erect.

* *Female flowers*, uſually on the ſame common peduncle with the males.

CAL. none.

COR. *Petals* in moſt ſpecies five, in ſome ſix, in others perhaps four, commonly unequal.

PIST. *Germ* inferior, three-ſided, in very many winged. *Styles* in moſt three, bifid. *Stigmas* ſix.

PER. *Capſule* in moſt three-cornered, winged, three-celled,

[a] Hort. malab. [b] Linn. [c] Hort. malab. [d] Mill. fig. [e] Hort. kew. [f] Sloane. [g] Hort. kew. [h] Ibid.

[i] Regi Galliæ ab intimis conſiliis, et rei nauticæ in ora Santonum præfectus.

celled, opening at the base by the wings; some are two-celled, and others perhaps one-celled.

ESSENTIAL CHARACTER.

MALE. *Cal.* none. *Cor.* many-petalled. *Stam.* numerous.

FEM. *Cal.* none. *Cor.* many-petalled, superior. *Capf.* winged, many-seeded.

SPECIES.

1. Begonia nitida.
*Dryand. in Linn. tranf.* 1. 159. *Ait. hort. kew.* 3. 352.
B. obliqua. *L'Herit. ſtirp. nov.* 1. 95. *t.* 46.
B. minor. *Jacqu. collect.* 1. 128. *n.* 3.
B. purpurea. *Swartz. prodr.* 86.
*Shrubby erect, leaves very ſmooth unequally cordate obſcurely toothed, largeſt wing of the capſule roundiſh.*

2. Begonia iſoptera.
*Dryand. in Linn. tranf.* 1. 160. *Smith ic. ined.* 2. *t.* 43.
*Cauleſcent, leaves ſmooth ſemicordate obſcurely toothed, wings of the capſule almoſt equal parallel.*

3. Begonia reniformis.
*Dryand. in Linn. tranf.* 1. 161. *t.* 14. *f.* 1, 2.
*Cauleſcent, leaves kidney-ſhaped angular toothed, the largeſt wing of the capſule acute-angled, the others parallel very ſmall.*

4. Begonia erminia.
*Dryand. in. Linn. tranf.* 1. 162. *L'Herit. ſtirp. nov.* 1. 97. *t.* 47.
*Cauleſcent, leaves cordate acuminate ſerrate, the largeſt wing of the capſule ſickle-ſhaped, the reſt obliterated.*

5. Begonia crenata.
*Dryand. in Linn. tranf.* 1. 162. *t.* 14. *f.* 3.
*Cauleſcent, leaves unequally cordate roundiſh obtuſe crenate-toothed, capſules two-celled.*

6. Begonia tenuifolia.
*Dryand. in Linn. tranf.* 1. 162. *t.* 14. *f.* 4.
*Cauleſcent, leaves unequally cordate ovate acute angular obſcurely toothed, capſules two-celled.*

7. Begonia ferruginea.
*Dryand. in Linn. tranf.* 1. 163. *Smith ic. ined.* 2. *t.* 44. *Linn. ſuppl.* 419. *Lamarck encycl.* 1. 395. *n.* 9. *Jacqu. collect.* 1. 128. *n.* 1.
*Cauleſcent, leaves unequally cordate toothed, petals of the male flower oblong nearly equal.*

8. Begonia grandis.
*Dryand. in Linn. tranf.* 1. 163.
B. obliqua. *Thunb. jap.* 231. *Kæmpf. ic. ſelect.* *t.* 20.
Sjukaido. *Kæmpf. amæn.* 888.
*Cauleſcent, leaves unequally cordate angular ſerrate, wings of the capſule a little unequal.*

9. Begonia macrophylla.
*Dryand. in Linn. tranf.* 1. 164. *Lamarck encycl.* 1. 394. *n.* 6.
B. grandifolia. *Jacqu. collect.* 1. 128. *n.* 2.
B. purpurea et nivea maxima, folio autito. *Plum. ic.* 34. *t.* 45. *f.* 1.

10. Begonia acutifolia.
*Dryand. in Linn. tranf.* 1. 165. *Jacqu. collect.* 1. 128. *n.* 4. *Sloan. jam. t.* 127. *f.* 1, 2.
*Cauleſcent, leaves ſemicordate angular toothed, the largeſt wing of the capſule obtuſe-angled, the others acute-angled.*

11. Begonia acuminata.
*Dryand. in Linn. tranf.* 1. 166. *t.* 14. *f.* 5, 6.
*Cauleſcent, leaves biſpid ſemicordate acuminate unequally toothed, the largeſt wing of the capſule obtuſe-angled, the others acute-angled.*

12. Begonia humilis.
*Dryand. in Linn. tranf.* 1. 166. *t.* 15. *Ait. hort. kew.* 3. 353.
*Cauleſcent upright, leaves biſpid ſemicordate doubly-ſerrate, wings of the capſule rounded a little unequal.*

13. Begonia hirſuta.
*Dryand. in Linn. tranf.* 1. 167. *Aublet guian.* 913. *t.* 348. *Lamarck encycl.* 1. 393. *n.* 3. *Jacqu. collect.* 1. 129. *n.* 8.
*Cauleſcent, leaves biſpid ſemicordate doubly ſerrate, the largeſt wing of the capſule obtuſe-angled, the others parallel and very ſmall.*

14. Begonia Urticæ.
*Dryand. in Linn. tranf.* 1. 167. *Linn. ſuppl.* 420. *Lamarck encycl.* 1. 394. *n.* 8. *Jacqu. collect.* 1. 129. *n.* 7.
B. urticæfolia. *Smith ic. ined.* 2. *t.* 45.
*Cauleſcent radicant, leaves biſpid on both ſides unequally ovate doubly ſerrate, capſules three-horned at the baſe.*

15. Begonia ſcandens.
*Dryand. in Linn. tranf.* 1. 168. *Swartz prodr.* 86.
B. glabra. *Aublet guian.* 916. *t.* 349. *Lamarck encycl.* 1. 394. *n.* 4. *Jacqu. collect.* 1. 129. *n.* 5.
*Scandent radicant, leaves ovate-roundiſh obſcurely toothed, the largeſt wing of the capſule obtuſe-angled, the others parallel and very ſmall.*

16. Begonia tuberoſa.
*Dryand. in Linn. tranf.* 1. 168. *Lamarck encycl.* 1. 393. *n.* 1.
Empetrum acetoſum. *Rumph. amb.* 5. 457. *t.* 169. *f.* 2.
*Creeping, leaves unequally cordate angular toothed, wings of the capſule parallel.*

17. Begonia rotundifolia.
*Dryand. in Linn. tranf.* 1. 169. *Lamarck encycl.* 1. 394. *n.* 7.
B. obliqua *β*. *Linn. ſpec.* 1498.
B. roſeo flore, folio orbiculari. *Tournef. inſt.* 660. *Plum. cat. amer.* 20. *ic.* 33. *t.* 45.
*Creeping, leaves reniform-roundiſh crenate.*

18. Begonia nana.
*Dryand. in. Linn. tranf.* 1. 169. *L'Herit. ſtirp. nov.* 1. 99. *t.* 48.
*Stemleſs, leaves lanceolate, ſcape with about two flowers.*

19. Begonia tenera.
*Dryand. in Linn. tranf.* 1. 169. *t.* 16.
Falkea tenera. *Koenig M. S. S. in bibl. Banks.* 17. *p.* 227.
*Stemleſs, leaves unequally cordate, flowers umbelled.*

20. Begonia diptera.
*Dryand. in Linn. tranf.* 1. 170.
B. capenſis. *Linn. ſuppl.* 420. *Jacqu. collect.* 1. 130. *n.* 9. *Linn. mant.* 502.
*Stemleſs, leaves unequally cordate, peduncles dichotomous, one wing of the capſule very large, another narrow, and the third obſcure.*

21. Begonia octopetala.
*Dryand. in Linn. tranf.* 1. 171. *L'Herit. ſtirp. nov.* 1. 101.
*Stemleſs, leaves cordate five-lobed, peduncles dichotomous.*

22. Begonia malabarica.
*Dryand. in Linn. tranf.* 1. 171. *Lamarck encycl.* 1. 393. *n.* 2. *Jacqu. collect.* 1. 129. *n.* 6. *Rheed. mal.* 9. 167. *t.* 86.
*Stems herbaceous, peduncles axillary ſhort ſubtriflorous, fruits berried.*

23. Begonia repens.
*Dryand. in Linn. tranf.* 1. 172. *Lamarck encycl.* 1. 394. *n.* 5.
B. obliqua γ. *Linn. ſpec.* 1498. *Plum. amer.* 20. *ic.* 34. *t.* 45. *f.* 2.
*Stems creeping rooting at the joints, leaves one-eared, peduncles axillary long many-flowered.*

DESCRIPTIONS, *&c.*

The whole plant in the Begonias is fleſhy. The ſtem, in moſt of the ſpecies, is herbaceous, but ſome of them are ſtemleſs. The leaves are petioled, in the cauleſcent ſpecies alternate. At the baſe of the petioles is a pair of ſtipules. The peduncles in the greater part are dichotomous; and, in the cauleſcent ſpecies, axillary. They are natives of Aſia and America, within the Tropics. Three ſpecies have been found on the iſlands near the coaſt of Africa, but none on that continent[a].

Plumier gave ſix ſpecies of Begonia, but the few words by which he diſtinguiſhed them, were not ſufficient to diſcriminate them ſpecifically. Whence Linneus, in his firſt edition of his Species Plantarum, joined all theſe, together with one from

[a] Dryander in Linn. tranſ. 1. 159.

Sloane, under the name of Begonia obliqua: and in the second edition he added two more synonyms, one from Rumphius, and another from Browne; so that it contained all the species at that time known. Chev. Lamarck in the Dictionnaire Encyclopedique, and M. Jacquin in the first volume of his Collectanea, were the first who attempted to bring this confused genus into some order; but neither of them had seen more than one species, and were obliged to make out the rest merely from books [b].

A species of Begonia flowering in october 1788, in Mr. Lee's garden at Hammersmith, fortunately induced Mr. Dryander to study this genus; and he laid the result of his researches before the Linnean society, the year following. The chief of what is here given is taken from that paper: and students in Botany will doubtless most ardently wish that many more obscure and doubtful genera may be treated in the same masterly way.

1. Stems almost upright, branched, round, smooth, as is the whole plant, with alternate cylindric branches. Leaves acute or acuminate, almost entire or obscurely toothed, seven-nerved; one lobe of the base is double the size of the other: the younger ones are rose-coloured about the edge; they are all very smooth and shining, bright green, paler beneath, permanent, spreading, four or five inches long, and two or three inches broad: the petioles are cylindric, thick, spreading, one-third only of the length of the leaf. Stipules sessile, oblong, one-nerved, as it were three-winged from a rib winged underneath produced into a point; on the sides membranaceous, revolute; they are spreading, deciduous, the length of the petiole. Racemes compound, cymose, androgynous, the males very numerous, the females few at the top, solitary, axillary, on long peduncles, dichotomous, three inches wide. Peduncles upright, cylindric, longer than the leaf, the thickness of the petiole. Bractes opposite, below the dichotomies and the pedicels, half-embracing, ovate or roundish, membranaceous, caducous. Corolla flesh or rose coloured [c], sometimes of a darker red: in the female flowers six-petalled [d].

This elegant shrub, which is now a common ornament to our hot-houses, was introduced here in the year 1777, by William Brown, M. D. It is a native of Jamaica [e], and flowers here from may to december.

2. Stem upright, obscurely streaked, smooth. Leaves acuminate, waved, veined, bright green and very smooth on the upper surface, pale ferruginous on the under, most minutely dotted. Petioles short, semicylindric, smooth. Panicle terminating, dichotomous, many-flowered, smooth. Bractes oblong, membranaceous, deciduous, leaving a scar in form of a half ring at the base of each peduncle and pedicel. Male flowers superior, more numerous than the females, and small. Corolla two-petalled; petals cordate-roundish, entire, blunt, converging very closely before they unfold. Stamens thirty to forty: anthers obcordate, awnless, margined, two-celled, gaping on one side. Capsule turbinate, with three equal wings, with the angles bent down very much, and not ascending. Seeds numerous, small. Native of Java: where it was observed by Thouin [f].

3. Stems short, the thickness of a finger. Leaves broader than they are long, crenate-toothed, with from eight to ten sharp unequal angles, cordate at the base, one side smaller than the other. Petioles the length of the leaf. Common peduncle a span in length, terminated by a twice dichotomous cyme, splitting into fourfold divisions. Pedicels umbelled. In the male flowers, petals four cross-shaped spreading white: two opposite larger ovate blunt quite entire, in the middle convex outwardly; the others only half the size, oblong-lanceolate, acute, slightly keeled. Filaments about thirty, nearly equal, yellow. Anthers linear-oblong, longer than the filaments, the length of the smaller petals, upright, yellow. No pistil. In the female flowers five petals oblong, nearly equal, spreading, a little concave, sharpish, white. Germ ovate, triangular: angles membranaceous: the membrane of the outer angle largest: styles three, two-parted, somewhat villose: stigmas simple. Capsule ovate, with the two inner angles equal and smaller than the third, which is very large and extends upwards into an acute angle; it is three-celled, and the cells are cylindric, gaping at the base. Seeds very numerous, ovate, small, flattened to a thick columnar receptacle [g].

Native of Brasil, near Rio de Janeiro, in shady clefts of rocks. Observed there by Sir Joseph Banks.

4. Stems few, simple, upright, scarcely a span in height. Leaves nearly equal, ciliate-toothed or serrate, having tailed toothlets on the upper surface most conspicuous whilst the leaves are young; they are very smooth, loosely nerved, bright green on both sides, three or four inches long, and two broad. Petioles nearly equal to the leaves. Stipules ovate, short, subulate-acuminate. Corymbs terminating, peduncled, upright, three-parted, androgynous. Bractes under the corymb and peduncles. Flowers peduncled, upright, whitish: males numerous; females mixed with the males, but fewer in number and scarcely larger, solitary in each branchlet of the corymb.

Native of Madagascar, on stones and rocks by brooks; collected there by Jo. Gul. Bruguiere, M.D. who looks upon the appendices to the leaves, resembling the galls on lime-tree leaves, or the tails in ermine, as belonging to the leaves themselves, and not occasioned by punctures of insects [h].

5. Flowers pale red. The male flowers have four petals, two opposite ones narrower, but scarcely shorter. The female flowers have five petals, three of which are narrower. Style single.

Native of the East-Indies, in the island Salsette, and near Fort Victory, on walls and rocks. Found there by Ant. Pantaleon Hove [i].

6. In the male flower, corolla four-petalled, compressed, pale flesh-colour with red streaks. Petals opposite in pairs; the two outer ovate-roundish, obtuse, a little cordate at the base, three or four lines in diameter; the two inner ones only half the size, ovate-oblong, bluntish. Filaments one hundred, inserted into a receptacle elevated into a little cone, and short: anthers ovate, erect, yellow. Pistil none. In the female flower, petals five, of the same colour as in the male, and of the same form with the outer petals in the male flower; the inmost less than the rest. Stamens none. Germ flesh-coloured. Styles three, smooth [k]. Native of Pulo Ponrangh, or Prince's island, near Java. Found there by Sir Joseph Banks [l].

7. Stem suffruticose, declining, round, rather solid, smooth and even: branches alternate, short, spreading, pubescent, leafy. Leaves spreading, sharp, obscurely crenate, subciliate; on the upper surface deep green, roughish, grooved at the veins; on the under pale, covered with very small rounded whitish scales crowded very close together; veins alternate, straight, divided, prominent, rough with hairs. Stipules semicordate, embracing, sharp, quite entire, subciliate; one twice the size of the other. Panicles dichotomous, axillary or terminating. Peduncles round, pubescent. Bractes a pair to each flower, from upright spreading, small, ovate, sharp, subciliate, deciduous. Flowers blood-red, nodding. Males very numerous. Petals four, nearly equal, lanceolate; the two outer ones a little longer, sharp, thicker, pubescent on the outside; inner blunt, emarginate, smaller especially before the expansion of the flower, smoothish. Stamens equal in length to the corolla (nine to eight, commonly twelve to fourteen) upright, with flat filaments. Anthers linear-lanceolate, very long, two-celled, yellow, gaping laterally, terminating in a filiform

[b] Dryander in Linn. transf. 1. 156. [c] L'Heritier. [d] Jacquin. [e] Dryander. [f] Smith.

[g] Solander in Linn. transf. 1. 161. [h] L'Heritier. [i] Dryander. [k] Solander in Linn. transf. 1. 162. [l] Dryander, Ibid.

filiform bifid beak; which is white except at the tip, where it is red, it is at firſt convolute, and afterwards revolute. No rudiment of a piſtil.—Female flowers mixed with the males, and a little larger. Petals ſix, like thoſe of the males; the three outer ſharp and oppoſite to the angles of the germ, the three inner emarginate and oppoſite to the ſides of the germ, all inſerted below the top of it. Stamens none. Germ turbinate, pubeſcent, coloured. Styles numerous (twenty-four), in ſix parcels, dichotomous, unequal in length, upright, ſcarcely equal to the corolla. Stigmas ſimple. Capſule turbinate, triangular, crowned with a tubercle, opening at the angles below: it has no wings. Seeds numerous, ſmall [m].

It is eaſily diſtinguiſhed from the other ſpecies hitherto known, by the long and narrow petals of the male flowers, all of the ſame breadth, and very little differing in length.

Mutis gathered it in New Granada [n].

8. Stem round, ſimple, the ſize of a quill, ſmooth, green except at the joints where it is red, dotted, two feet high, lax, upright; ſometimes there is a ſmall branch from the axils. Leaves ovate, ſhorter on one ſide, ſharp, doubly ſerrate, nerved, rough with ſmall prickles, otherwiſe ſmooth, pale beneath. Petiole round, like the ſtem, a finger's length. Flowers terminating, in a dichotomous panicle. Peduncles round, red, ſmooth, divided: pedicels ſubtriflorous, ſubdivided into three other pedicels. Bractes under the peduncles and pedicels two, oppoſite, ovate, blunt, concave, entire, purple, ſmooth, a little ſhorter than the flower. Corolla (in the male flowers) four-petalled, ſmooth, purple; the petals, before they open are cordate and compreſſed; but when open they are ſpreading and unequal: the two outer cordate, roundiſh; the inner only one-fourth of the ſize. Filaments more than fifty, united at the baſe, white, ſhorter than the corolla: anthers roundiſh, twin, yellow [o].

The wings of the germ, in the figure given by Kæmpfer, from whom alone we are acquainted with the female flowers, have an acute angle in ſeveral inſtances, but in others they are rounded. Thunberg ſuppoſes this ſpecies to be dioecous, but Kæmpfer's figure has male and female flowers in the ſame panicle. [p] It is not uncommon to find male flowers only on monoecous plants.

This ſpecies and the next have by far the largeſt leaves of any in the genus; but in this the flowers are twice as large as in macrophylla [p].

Native of Japan.

9. This is two feet high, and entirely ſmooth. The female flowers are five-petalled [q]. A ſpecimen in Sir Joſeph Banks's herbarium has a panicle conſiſting entirely of female flowers in the axilla of the lower leaf; and from the axilla of the leaf above a panicle of male flowers. Native of the iſlands in the Weſt-Indies [r].

10. This ſpecies comes very near to the following, but differs in having few or no hairs on the leaves, which are on longer footſtalks one-third or one-fourth of the length of the leaf itſelf; theſe on the contrary are ſo ſhort in B. acuminata, as not to equal the angle of the leaf, which extends beyond the inſertion of the footſtalk [s]. According to Jacquin, the ſtems creep, and as they run along, put out both roots, and upright branches a foot and half in height.

Native of Jamaica, where it was obſerved by Sir Hans Sloane, and ſince by Maſſon. Sloane's deſcription does not accord either with his figure or ſpecimens [t].

11. In the male flowers four petals, of which two that are oppoſite are ſmaller. The female flowers have five petals, of which two alſo are ſmaller than the reſt. At the baſe of the germ are two bractes, which are ſharply ſerrate, and only half the length of the germ.

[m] Smith. [n] Dryander in Linn. tranſ. 163. [o] Thunberg. [p] Dryander in Linn. tranſ. 164. [q] Jacquin. [r] Dryander. [s] Ibid. [t] Ibid.

Native of Jamaica, on the blue mountains. Introduced into the Royal garden at Kew in 1790 [u].

12. The whole plant is pellucid. Stem, petioles and peduncles pale red. Stem round, ſwelling at the joints, a ſpan high the firſt year, and two feet the ſecond. Leaves acuminate, the ſerratures ciliate, the upper ſurface deep green, hiſpid with ſoft upright *ſtrigæ*, tubercled at the baſe; the lower pale green, quite ſmooth except a few *ſtrigæ* on the veins, as alſo on the petioles. Stipules ſemiovate, concave, ciliate, hyaline. Peduncles axillary, uſually dichotomous. Bracte at the baſe of the pedicels, ovate, ciliate, minute. In the male flower, petals white; two cordate-orbiculate, large; two very ſmall; theſe are wanting in ſome flowers. Filaments about fifteen, very ſhort: anthers oblong, yellow. In the female flowers, petals five, white, permanent, obovate-oblong, two a little narrower. Germ three-cornered, the corners ſharp; the wings rounded, a little unequal, pale fleſh-colour. Styles three, very ſhort. Stigmas two-parted, the parts divaricate, then converging, and afterwards diverging again; they are yellow, and covered with very ſmall glands.

It is a native of the iſland of Trinidad in the Eaſt-Indies, and was found there by Alex. Anderſon.

When this plant flowered in Mr. Lee's garden at Hammerſmith in october 1788, it was ſuppoſed to be annual, having produced flowers and fruits in a few months from its being ſown. It was then very low, whence it got the trivial name of *humilis*, but it has ſince ſtood over the winter, and grown much taller [x].

13. Stem cylindric, branched. Leaves eared, ovate, deeply notched, ſharp, ſtreaked with red veins, petioled. Stipules long, toothletted. Flowers panicled, terminating, dichotomous, with two ſmall linear ſcales at the baſe of each. Corolla white [y].

The female flowers, according to Jacquin, are five-petalled. He affirms alſo, that this ſort is annual and dioecous; but that may be a miſtake. See n. 8.

Obſerved by Monſ. Fuſée Aublet, on the rocks of Guiana.

14. Stems very many, a foot high, aſcending, jointed, throwing out roots at the joints, branched, leafy, roundiſh, ſubflexuoſe, rough with hairs at top. Leaves ſpreading, ſharp, the ſerratures tipt with a hair, pale beneath, when they grow old entirely red. Petioles ſhort, round, rough with hairs. Stipules ovate, membranaceous, ſetaceous-toothed at the tip, ſomewhat hairy on the outſide. Peduncles axillary, the length of the leaf, upright, filiform, rough with hairs. Bractes membranaceous, ciliate-toothed, coloured. Flowers uſually in pairs, a male with a female, ſmall, blood-red. In the male, petals four; the two outer oppoſite, ovate, hairy on the outſide towards the tip; the inner narrower, ſcarcely ſhorter, paler and more tender, ſmooth. Stamens ſcarcely equal to the corolla (fourteen to eighteen) upright. Filaments ſhort, irregularly united, whitiſh, ſmooth: anthers oblong, awnleſs, two-celled, gaping at the ſides, yellow. No rudiment of a piſtil. Female flowers very like the males; petals ovate, obtuſe, probably five. No ſtamens. Germ inferior, very large, hairy, three-horned at the baſe, crowned at the tip with the ſtyles and petals. Styles about five, upright, ſhorter than the petals, ſubfoliaceous, and one or two of them reſembling petals: ſtigmas ſubcapitate, and ſeem to be ſimple. Jacquin ſays, that it is annual, but it is probably a perennial plant. Mutis gathered it in New Granada [z].

15. This differs from the thirteenth in having the ſtems decumbent, knotty, and puſhing out roots at the knots; it climbs trees when they are within its reach. Leaves leſs deeply toothed. Flowers ſmaller, greeniſh [a]. Aublet affirms, that this ſpecies is dioecous. He alſo ſays, that the leaves are ſmooth, but they are not quite without hairs [b]. This is peren-

[u] Dryander. [x] Idem. [y] Aublet. [z] Smith. [a] Aublet. [b] Dryander.

nial,

nial, and a native of Guiana, the iſle of France[c] and Jamaica[d].

16. Stems round, creeping. Scapes upright, round, red, ſemipellucid, racemed. Leaves pale red, white or pale green, ſmooth and ſomewhat ſhining. Petals two, red on the outſide, white within, in the male flowers: four in the female flowers, and white[e].

Lamarck has joined this with *B. capenſis* of Linneus's ſupplement (n. 20.); but the capſules of that ſpecies have only two winged corners, one wing being very large; and there is every reaſon to ſuppoſe, from the figure and deſcription of Rumphius, that this has all the wings of the ſame ſize, as in *B. iſoptera*[f].

Native of Amboina, the Molucca iſlands, and Celebes[g].

17. Stems thick, cylindric, naked, with ſmall permanent ſtipules, between which they are marked with ſcars from the fallen leaves: towards the top are ſeveral leaves, ſlightly crenate, green and ſhining above, white beneath, on pretty long petioles. From the end of each ſtem ariſes a peduncle or rather ſcape, longer than the leaves, bearing an umbel-ſhaped panicle of red monoecous flowers at the top. Native of South America, on rocks and trees[h]. This is one of the ſpecies which was found by Plumier.

18. Root perennial, fleſhy, in a manner tuberous, roundiſh, fibrous at the baſe, red within, brittle. Leaves few, radical, equal, acuminate, ſharp at the baſe, ciliate-ſerrate, ſmooth, bright green on both ſides, from ſixteen to eighteen lines in length, and ſix lines in breadth. Petioles ſcarcely ſhorter than the leaves. Scape upright, the length of the leaves, with two or three flowers at the top, very ſmooth. Flowers peduncled, upright, one or two males, the third female, ſcarcely larger than the others, four or five lines in diameter. Bractes oppoſite, linear, ſharp, under the peduncles. Corolla of the males four-petalled; of the female ſix-petalled. Capſule oblong, triangular; one of the wings very large. Seeds very numerous, roundiſh, and very ſmall.

Native of Madagaſcar, on rocks and trunks of trees. Found by Bruguiere[i].

19. Leaves all radical, orbiculate-cordate, ſharp, unequally toothed, membranaceous, tender, with white pellucid fibrils glandular at the baſe on the upper ſurface, and with a ſmaller number of them eſpecially at the veins on the under ſurface. Petioles round, almoſt upright, ſmooth, with a few fibrils ſcattered about them, red, longer than the leaves, often a foot in length, ſmaller than a gooſe-quill. Scapes upright, round, ſmooth and even, with fibrils on them, ſhorter and more ſlender than the petioles. Stipules radical, ovate, acuminate, concave, keeled at the back, fleſhy, whitiſh, withering, half an inch long. Male flowers numerous; females few: umbels ſometimes compound. Bractes at the baſe of the pedicels lanceolate, ſmall, caducous. Pedicels round, ſmooth, with fibrils ſcattered over them, a little coloured, longer than the flower. In the male flower, petals four, ſnow white; the two outer cordate-orbiculate, with fibrils on the outſide, within ſmooth, marked with obſcure nerves, before they open preſſed cloſe, flat, after they open ſpreading; the two inner alternate with the outer ones, ovate, acute, ſmooth on both ſides, leſs by two-thirds than the outer ones. Filaments connate at the baſe, numerous, (fifty) capillaceous, ſmooth, greeniſh white: anthers upright, club-ſhaped, longer than the filaments, ſhorter than the inner petals, yellow. In the female flower, petals ſix, three outer and three inner, differing from the male only in number. Germ club-ſhaped, three-ſided, winged at the angles, having fibrils ſcattered over it. Styles three, almoſt upright, club-ſhaped, ſmooth, yelloviſh, a little ſhorter than the ſmaller petals. Stigmas curved in a kidney ſhape, with the tips thicker, covered with very ſlender golden-coloured hairs, eſpecially at the tips. Capſule turbinate, with three wings. Seeds faſtened to the wings on each ſide, numerous, globular, very ſmall. Native of Ceylon: found there by Koenig[k].

20. Root tuberous, thick. Scapes roundiſh, longer than the petioles, panicled. Leaves radical, petioled, repand, toothletted. The male flowers have two obcordate, upright petals, and two cordate, pale roſe-colour: ſtamens many, with linear anthers, longer than the filaments. In the female flowers, the corolla as in the male: no ſtamens: ſtyles three, branched, filiform; ſtigmas blunt. Capſule inferior, with three unequal ſides[l]. Native of the iſland of Joanna, in ſhady places, by the ſides of mountains; found there by Koenig[m].

21. Root tuberous, viſcid, purple within. Leaves radical, equal or nearly ſo, the lobes blunt, ſharp at the end, doubly or unequally toothed, nerved, veined, ſcarcely pubeſcent, a ſpan long. Petioles pubeſcent, longer than the leaves. Scape upright, two feet high, pubeſcent, many-flowered and trifid at the top, the middle ſegment bearing one male flower, the lateral ones ſubdivided. Flowers in a kind of corymb, pedicelled, males and females mixed, but fewer of the latter. Bractes oppoſite, ſeſſile, under the peduncles and pedicels, ovate, emarginate, deciduous. Petals in the males ſix to nine, but moſt frequently eight, of which four are exterior: in the females five or ſix; in both equal or nearly ſo. Found on the mountains of Lima, by Dombey; who ſent the ſeeds to the Paris garden, where it has grown ſome years (1785), but has not flowered[n].

22. No other ſpecies of Begonia being hitherto known, whoſe female flowers have only three petals, it requires the confirmation of modern botaniſts before we can truſt to the authority of the Hortus Malabaricus for ſo ſingular a circumſtance. The male flowers of B. humilis have ſometimes only two petals, and why may not a ſimilar monſtroſity happen in female flowers[o]? Native of Malabar.

23. Chevalier Lamarck deſcribes this with white flowers, which according to Plumier's name ſhould be pink. He gives as a variety B. roſeo flore, folio aurito, minor et glabra; and adds, ic. 45. f. 3; but that figure belongs to B. roſeo flore, foliis acutioribus, auritis et late crenatis[p]. Native of St. Domingo.

The two laſt are juſtly denominated obſcure ſpecies by Mr. Dryander, who adds alſo the following.

1. Acetoſa Nigritarum ſeu Indorum Lingat. *Kamel ſtirp. luzon. in Raii hiſt. 3. p. 14. n. 24. Icon in Muſ. brit. mſs. ſloan. 4080. f. 109.*

This comes very near to B. malabarica, ſo far as can be judged from the rude figure of Father Kamel[q].

2. In a volume of drawings in Sir Joſeph Banks's library, made at Canton by a Chineſe, who had been inſtructed by the late Mr. Blake in the art of making botanical drawings, is a figure of a Begonia, under the name *Tſou Hay Tong*, which is related to *grandis*, but differs in the leaves not being angulated, and the margin being equally ſerrate. As only male flowers are repreſented in the drawing, it is impoſſible to determine it[r].

3. Begonia roſeo flore, folio aurito minor et glabra. *Tournef. inſt. 660. Plum. amer. 20.* B. obliqua β. *Linn. ſpec. 1498.*

This is referred to B. nitida by Jacquin and Swartz: but Plumier was not in Jamaica, whence alone that ſpecies has come to us: beſides the epithet of *minor* is ill applicable to ſo tall a ſhrub as that, which has as large leaves as any in the genus, except *macrophylla* and *grandis*[s].

4. Begonia roſeo flore, foliis acutioribus, auritis et late crenatis. *Tournef. inſt. 660. Plum. amer. 20. ic. 34. f. 45. f. 3.*—B. obliqua α. *Linn. ſpec. 1498.*

5. Rumex ſylveſtris ſcandens, foliis cordato-angulatis ab altera parte majoribus. *Brown. jam. 203.*

[a] Aublet. [b] Dryander. [c] Rumphius. [d] Dryander. [e] Rumphius. [f] Lamarck. [g] L'Heritier.

[h] Koenig in Linn. tranſ. [i] Koenig in Linn. mant. [k] Dryander in Linn. tranſ. [l] L'Heritier. [m] Dryander in Linn. tranſ. [n] Ibid. [o] Id. ib. 171. n. 2. [p] Id. ib. 172. n. 3. [q] Id. ib. 172. n. 5. & 160.

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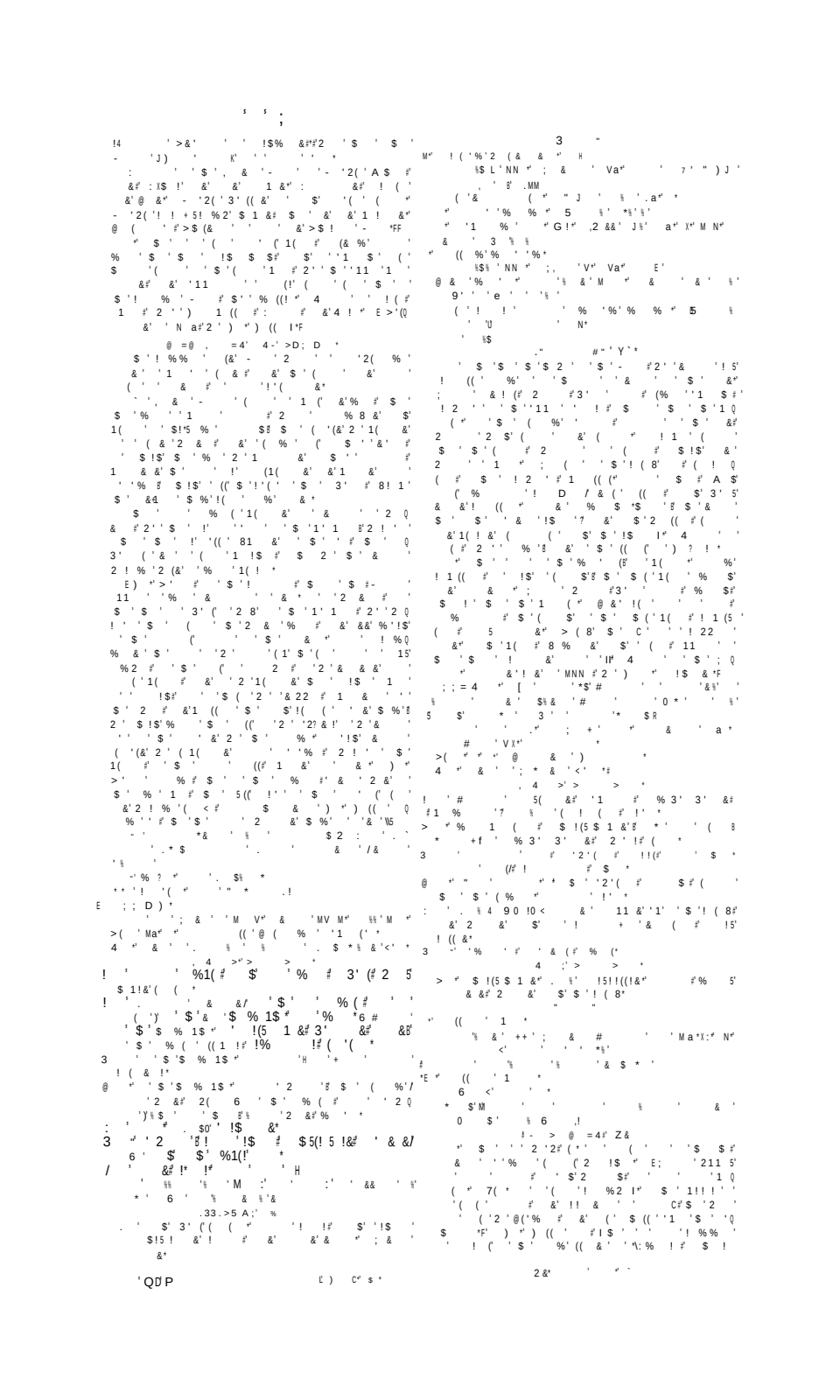

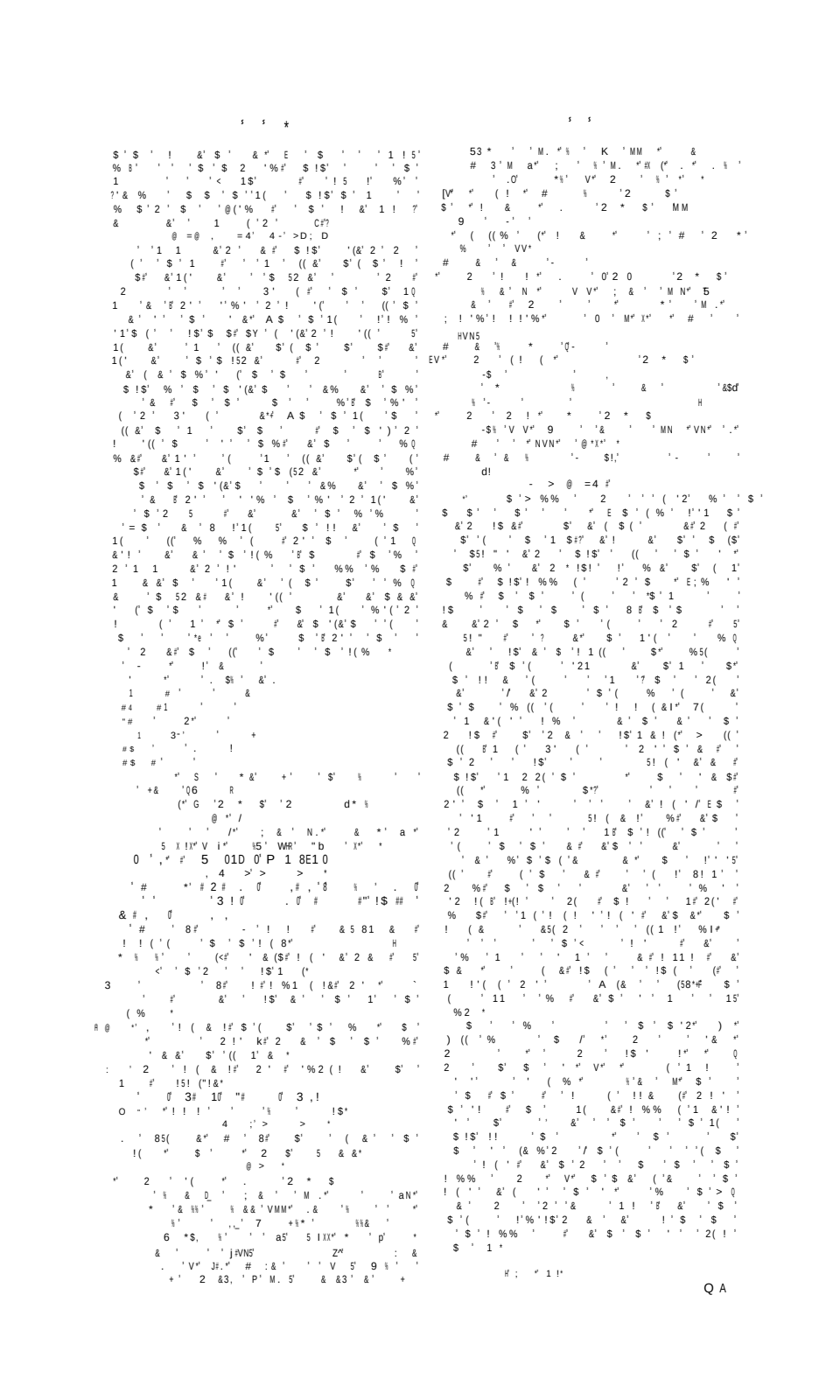

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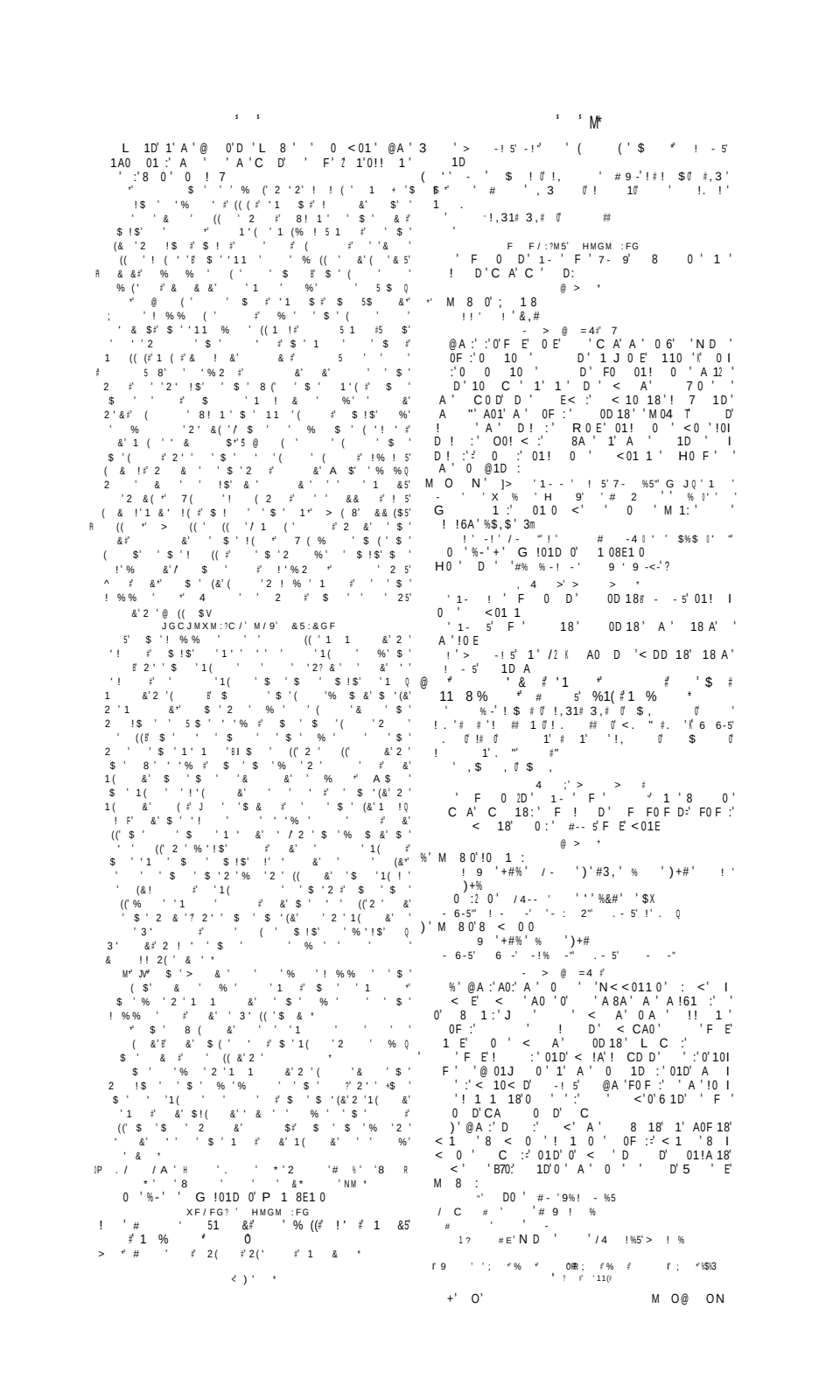

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BETONICA. (*Corrupted from Vettonica, which is derived from the Vettones, an ancient people of Spain.*)
Engl. *Betony.* Fr. *Betoine.*
*Lin. gen. n.* 718. *Reich.* 776. *Schreb.* 973. *Tournef.* 96. *Juſſ.* 114.
Claſſ. 14. 1. Didynamia Gymnoſpermia.
Nat. order of *Verticillatæ*, or *Labiatæ.*

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, cylindric, five-toothed, awned, permanent.
COR. monopetalous, ringent: *tube* bent in, cylindric: *upper lip* roundiſh, entire, flat, erect; *lower* trifid: *middle diviſion* broader, roundiſh, emarginate.
STAM. *Filaments* four, ſubulate, the length of the throat; two ſhorter, inclined to the upper lip. *Anthers* roundiſh.
PIST. *Germ* four-parted. *Style* form, ſituation and ſize of the ſtamens. *Stigma* bifid.
PER. none. *Calyx* ſoſtering the ſeeds in its boſom.
SEEDS four, ovate.

ESSENTIAL CHARACTER.

*Cal.* awned. *Cor.* upper lip aſcending, flattiſh; tube cylindric.

SPECIES.

1. Betonica officinalis. *Wood Betony.*
*Lin. ſpec.* 810. *Reich.* 3. 53. *fuer. n.* 515. *hort. cliff.* 310. *upſ.* 164. *mat. med* 149. *Hudſ. angl.* 258. *With.* 611. *Curtis lond.* 3. 33. *Lightf. ſcot.* 311. *Relh. cantabr. n.* 437. *Hall. helv. n.* 264. *Scop. carn. n.* 729. *Pollich pal. n.* 562. *Krock. ſilef. n.* 936. *Villars dauph.* 2. 379. *Allion. pedem. n.* 128. *Riv. t.* 28. *Blackw. t.* 46. *Fl. dan.* 726. *Sabb. hort. t.* 82. *Mor. hiſt. f.* 11. *t.* 5. *f.* 1. *Pet. herb. t.* 32. *f.* 6. *Ger. emac.* 714. *Park.* 614. 1. *Raii hiſt.* 550. *Cam. epit.* 681.
β. B. alba. *Bauh. pin.* 235. *Hall. β. Ger.* 577. 2.
γ. B. minima alpina helvetica. *Tourn. Hall. γ. Lightf. β. Mor. f.* 4. *Park.* 614. *f.* 3. *Raii hiſt.* 550.
*Spike interrupted; helmet of the corolla entire; middle diviſion of the lower lip emarginate; calyxes ſmoothiſh.*
2. Betonica orientalis. *Oriental Betony.*
*Lin. ſpec.* 811. *Reich.* 3. 54. *Tournef. cor.* 13.
*Spike entire, middle diviſion of the lip of the corolla quite entire.*
3. Betonica alopecuros. *Fox-tail Betony.*
*Lin. ſpec.* 811. *ſyſt.* 535. *Reich.* 3. 54. *Jacqu. vind.* 251. *auſtr.* 1. *t.* 78. *Crantz. auſtr.* 256. *Krock. ſilef. n.* 937. *Villars dauph.* 2. 381. *Allion. pedem. n.* 129. *Mill. dict. edit.* 7. *n.* 7.
Sideritis alopecuros. *Scop. carn. n.* 711. *t.* 28.
Horminum alpinum luteum, betonicæ ſpica. *Raii hiſt.* 547.—minus album, &c. *Bauh. pin.* 239. *prodr.* 114.
*Spike leafy at the baſe, helmet of the corolla bifid.*
4. Betonica hirſuta. *Hairy Betony.*
*Lin. ſyſt.* 535. *Reich.* 3. 55. *mant.* 248. *Murr. comm. gott.* 1779. *vol.* 2. 13. *t.* 3. *Hall. helv. n.* 265. *Villars dauph.* 2. 380.
B. alpina. *Mill. dict. n.* 3.
B. Monierii. *Obſ.* 146. *Gouan. illuſtr.* 36. *Allion. pedem. n.* 130.
B. alpina incana purpurea. *Barr. ic.* 340.
B. fol. hirſutis, flor. purpureis ampliſſimis. *Mentz. pug. Zanon. t.* 30. *p.* 46.
*Spike leafy at the baſe, helmet of the corolla entire.*
[5. Betonica heraclea.
*Lin. ſyſt.* 535. *Reich.* 3. 55. *mant.* 83.
*Spike with woolly calyxes, teeth filiform; leaves lanceolate naked.*]
6. Betonica ſtricta. *Daniſh Betony.*
*Ait. hort. kew.* 2. 299.
B. danica. *Mill. dict. n.* 2.
*Spike oblong; helmet of the corolla entire, middle diviſion of the lower lip notch-waved; calyxes hairy.*
7. Betonica incana. *Hoary Betony.*
*Mill. dict. n.* 5. *Ait. hort. kew.* 2. 299.
*Spike interrupted; helmet of the corolla bifid, middle diviſion of the lower lip notched; tube tomentoſe beat in.*

DESCRIPTIONS, *&c.*

The ſpecies of this genus are herbaceous, fibrous-rooted, hardy, perennial plants. The ſtems are ſimple, or but little branched. The flowers are in whorls, forming a terminating ſpike.

1. Common Wood Betony has an upright ſtem, a foot high or more, not branched, or but very little in the wild ſtate, hairy, channelled, the corners rounded. Root-leaves on long petioles, oblong-heart-ſhaped, obtuſe, wrinkled, crenate, with few hairs, but dotted all over with ſmall hollow points, the edge ciliate. Stem-leaves ſubſeſſile, lanceolate, ſerrate. Bractes numerous, lanceolate, ciliate, ſhorter than the calyx. Flowers in whorls, forming a ſhort ſpike at the top of the ſtem, the lowermoſt remote: there are about fourteen flowers in a whorl: in ſome ſeventeen or eighteen. Calyx coloured, ſeſſile, almoſt upright, villoſe within, having long hairs between the five long-pointed ſegments; the two upper teeth are recurved. Corollas purple, varying to fleſh-colour and white: tube downy, longer than the calyx: upper lip commonly entire, but ſometimes cloven at the end: lower ſcalloped or crenulate: filaments villoſe; anthers blackiſh [a].

Native of woods, heaths and paſtures among buſhes; flowering from the beginning of july to ſeptember.

Betony, ſays Linneus, was formerly much uſed in medicine, but it is diſcarded from modern practice. When freſh it intoxicates. The leaves when dry excite ſneezing. Sheep eat it, but goats refuſe it. The leaves and flowers, according to Lewis, have an herbaceous, roughiſh, and ſomewhat bitteriſh taſte, with a weak aromatic flavour. An infuſion or light decoction of them may be drank as tea; or a ſaturated tincture in rectified ſpirit may be given in laxity and debility of the viſcera. The ſneezing quality of the dried leaves ſeems to be owing only to the rough hairs on them. The roots are bitter and very naufeous: in a ſmall doſe they vomit and purge violently. This plant dyes wool of a very fine dark yellow colour.

β. It is not uncommon with a white flower, in ſubalpine paſtures. Gerard remarked it near Hampſtead; and Mr. Miller ſays, he often found it in Kent.

[γ. There is a ſmall mountainous variety not unfrequent, with a ſpike nearly globular; the leaves and flowers are ſmaller: but all theſe differences are owing to ſituation.]

2. Leaves very long, narrow, hairy, neatly crenated on their edges. Flowers in very cloſe thick ſpikes at the top of the ſtalks: they are larger, and of a lighter purple than thoſe of the common ſort. It was firſt diſcovered by Tournefort in the Levant: and was cultivated by Mr. Miller in 1739 [b].

3. This has the appearance of common Betony, but the leaves are altogether heart-ſhaped, hirſute and ſerrate. The ſtem is a foot high, hirſute, obtuſely quadrangular, and has two or three pairs of leaves; thoſe immediately under the whorls are entire, broad, with the ends bent down. The whorls have from ſixteen to twenty flowers, forming a ſhort ſpike. The flowers ſmell like Elder. The calyx is ſeſſile, villoſe, pentangular; the teeth equal and acuminate: under each a ſmall lanceolate bracte. The corollas are pale yellow: the upper lip oval, drawn out into a bifid point: the lower lip trifid, with the middle ſegment quite entire and bent upwards; the tube is flattened, and of the ſame length with the calyx. Filaments lanuginous. Germs ſmooth and ſhining.

Scopoli will not allow this to be a Betony, becauſe the germs are covered with a crown of villoſe hairs [c].

It is a native of the mountains of Savoy, Piedmont, Auſtria, Carniola, Sileſia, and Provence: and was cultivated in 1759, by Mr. Miller [d].

4. This reſembles the foregoing, but is more ſtout, luſty and hairy, with a ſhorter, thicker ſpike.

[a] Curtis, Withering. [b] Hort. kew. [c] Scopoli. [d] Hort kew.

The helmet of the corolla is entire, not bifid; and the corolla is purple, not yellow; the ſpike is ovate, and not interrupted, as it is in that. Bractes between the flowers oblong; the larger ones ſerrate, the ſmaller only ſubciliate, not ovate. It has a pair or two of petioled leaves, beſides the ſeſſile pair under the ſpike, as in that*.

Ray, who cultivated it ſome years in his garden at Cambridge, ſays that it differs from the firſt ſort, in having leaves twice or thrice as large; a ſtronger ſmell approaching to a ſtink; a firmer and loftier ſtem; thicker and longer ſpikes of purple flowers.]

Mr. Miller affirms, that it ſeldom riſes more than four inches high in the wild ſtate, and when cultivated in a garden not above ſeven or eight; that the leaves are much broader at the baſe than thoſe of the common ſort, and very different in ſhape, being triangular, and blunt at the end; the ſpikes are very ſhort and cloſe, and theſe differences are conſtant.

[Native of the Alps, Apennines, and Pyrenees; and cultivated by Mr. Miller, in 1739[f].

5. Stem and leaves almoſt ſmooth. Spike largiſh, woolly. Involucres filiform, the length of the calyx. Teeth of the calyx filiform, ſoft, the length of the tube. Corollas yellow; upper lip ſcarcely longer than the calyx; lower trifid, with the middle ſegment larger than the two others and rounded. Stamens nearly the length of the upper lip[g]. Native of the Levant.]

6. This differs greatly from our common ſort, the lower leaves being much broader and heart-ſhaped; thoſe upon the ſtalks are ſpear-ſhaped, and rounded at the end; the ſtalks are larger, ſtand upright, and are terminated by thicker ſpikes of flowers. Native of Denmark. [Cultivated by Mr. Miller in 1759[h].]

7. The leaves of this ſort are broader, and not ſo long as thoſe of the common ſort, and are hoary; the ſtalks are ſhorter and much thicker, as are alſo the ſpikes of flowers, than thoſe of the common Betony; the flowers are larger and fleſh-coloured. Native of Italy. [Cultivated by Mr. Miller in 1759[i].]

PROPAGATION AND CULTURE.

All the ſorts may be propagated by ſeeds, or parting the roots. They require a ſhady ſituation and a moiſt ſtiff ſoil, in which they will thrive better than in rich ground. The beſt time to tranſplant and ſeparate the roots is in the autumn, but the ſeeds ſhould be ſown in the ſpring upon a ſhady border, and when the plants come up, they will require no other care but to keep them clean from weeds, and to thin them where they are too cloſe.

Theſe all of them flower in may and june, and the ſeeds ripen in auguſt.

BETONICA aquatica. See *Scrophularia*.

——— Pauli. See *Veronica*.

BETULA. (*From* bitumen, *according to ſome* (Plin. l. 16. c. 18.): *from* batuere, i. e. cædere, q. Batula, *according to others.*)

*Lin. gen. n.* 1052. *Reich.* 1147. *Schreb.* 1419. *Tournef.* 350. *Juſſ.* 409. *Gærtn. t.* 90.——Alnus. *Tournef.* 359. *Gærtn. t.* 90.

Engl. *Birch* and *Alder*. Fr. *Bouleau* & *Aune*.

Claſſ. 21. 4. Monoecia Tetrandria.

Nat. order of *Amentaceæ*.

GENERIC CHARACTER.

* *Male flowers* in a cylindric ament.

CAL. *Ament* imbricate on every ſide, looſe, cylindric; conſiſting of three-flowered *ſcales*, in each of which are two very minute ſcales, placed at the ſides. Three equal ſtoſcules, fixed to the diſk of each ſcale of the calyx.—*Perianth* in each one-leafed, ſmall, entire, three or four-parted; *diviſions* ovate, obtuſe.

COR. none.

STAM. *Filaments* to each four (or three or two) very ſmall. *Authers* twin.

* *Female flowers* in an ament of the ſame plant.

CAL. *Ament* cylindric or roundiſh, imbricate; with two-flowered *ſcales*.

COR. none.

PIST. *Germ proper* ovate compreſſed, very ſmall, two-ſeeded. *Styles* two ſetaceous. *Stigmas* ſimple.

PER. none. *Ament* under each ſcale cheriſhing the ſeeds of two florets.

SEEDS ſolitary, ovate.

OBS. Betula T. *has the fruits in cylindric aments: ſcales three-forked: ſeeds with a double lateral wing.* Alnus T. *has them in a roundiſh ſtrobile: ſcales roundiſh: ſeeds angular, without wings.*

ESSENTIAL CHARACTER.

MALE. *Cal.* one-leafed, three-cleft, three-flowered. *Cor.* four-parted.

FEM. *Cal.* one-leafed, ſubtrifid, two-flowered. *Seed* with a winged membrane on each ſide.

SPECIES.

1. Betula alba. *Common Birch-tree.*

*Lin. ſpec.* 1393. *Reich.* 4. 125. *mat. med.* 200. *hort. cliff.* 442. 1. *lapp.* 341. *ſuec.* 859. *amæn.* 1. *p.* 2. *Hudſ. angl.* 416. *With.* 1065. *Lightf. ſcot.* 572. *Evelyn, p.* 96. *fig. Hunt. Evel.* 218. *Hall. helv. n.* 1628. *Pallas roſſ.* 61. *Scop. carn. n.* 1171. *Leers herborn. n.* 730. *Pollich pal. n.* 898. *Allion. pedem. n.* 1973. *Villars dauph.* 2. 788. *Duham. arb.* 1. 100. *t.* 39. *Blackw. t.* 240. *Tray.* 1113. *Matth.* 142. *Dod.* 836. *Camer. epit.* 68. *Lob. ic.* 2. 190. *Bauh. hiſt.* 1. 149. *Ger.* 1295. *emac.* 1478. *Park.* 1408. *Raii hiſt.* 1410.

β. B. pendula. *Weeping Birch.*

γ. B. alba dalecarlica. *Lin. ſuppl.* 416.

*Leaves ovate acuminate ſerrate.*

2. Betula nigra. *Black Virginia Birch-tree.*

*Lin. ſpec.* 1394. *Reich.* 4. 126. * *Duham. arb.* 3. *Gærtn. fruct.* 2. 54. *t.* 90. *Gron. virg.* 188: 146. *Pluk. alm.* 67. *Raii dendr.* 12. *n.* 2. *Ait. hort. kew.* 3. 336.

*Leaves rhomb-ovate acute doubly ſerrate, pubeſcent underneath, entire at the baſe: ſcales of the ſtrobiles villoſe, ſegments linear equal.*

3. Betula lenta. *Canada Birch.*

*Lin. ſpec.* 1394. *Reich.* 4. 126. *Gron. virg.* 115: 146. *Duham. arb. n.* 2.

*Leaves cordate oblong acuminate ſerrate.*

4. Betula nana. *Smooth Dwarf Birch.*

*Lin. ſpec.* 1394. *Reich.* 4. 127. *lapp. n.* 342. *t.* 6. *f.* 4. *ſuec.* 860. *hort. cliff.* 422. *amæn.* 1. *p.* 4. *t.* 1. *Hudſ. angl.* 416. *With.* 1066. *Lightf. ſcot.* 575. *t.* 25. *Hall. helv. n.* 1629. *Fl. dan. t.* 91. *Pallas roſſ.* 63. *t.* 40. D—G.

*Leaves orbiculate crenate.*

[5. Betula pumila. *American* or *hairy Dwarf Birch.*

*Lin. ſyſt.* 849. *Reich.* 4. 127. *mant.* 124. *Jacqu. hort.* 2. *t.* 122.

B. nana. *Kalm it.* 2. 263.

*Leaves obovate crenate.*

6. Betula Alnus. *Alder.*

*Lin. ſpec.* 1394. *Reich.* 4. 127. *ſuec. n.* 861. *Hudſ. angl.* 416. *With.* 1067. *Lightf. ſcot.* 576. *Pollich pal. n.* 899. *Pallas roſſ.* 64. *Leers herborn. n.* 731. *D'Aſſo aragon. n.* 923. *Ait. hort. kew.* 3. 338.]

Alnus. *Lin. lapp.* 340. *hort. cliff.* 441. *Gærtn. fruct.* 2. 54. *t.* 90. *Hall. helv. n.* 1630. *Mill. dict. edit.* 7. *Loeſ. pruſſ.* 10. *t.* 1. *Hunt. Evelyn.* 233. *Ger.* 1294. *emac.* 1477. *Park.* 1409. *Raii hiſt.* 1409. *Cam. epit.* 68.

α. glutinoſa. *Common Alder.*

*Leaves undivided.*

β. A. laciniata. *Cut-leaved Alder.*

*Ait. hort. kew.* 3. 338. 10 β. *Duham. arb.* 42. *n.* 4.

*Leaves pinnatifid.*

*Peduncles branched; leaves roundiſh-wedge-form very obtuſe glutinous; axils of the veins villoſe underneath.*

[7. Betula incana. *Hoary Alder.*

*Lin. ſyſt.* 849. *ſuppl.* 417. *Hall. helv. n.* 1631. *Villars dauph.* 2. 790. *Pallas roſſ.* 64. *Du Roy barbarc.* 1. 109. *Gmel. ſib.* 1. 171. *t.* 24. 2.

B. Alnus

* Linn. [f] Hort. kew. [g] Linn. [h] Hort. kew. [i] Ibid.

Betula Alnus incana. *Lin. ſpec.* 1394. *Reich.* 4. 127. B. viridis. *Villars dauph.* 2. 789.

Alnus fol. incano. *Bauh. pin.* 428. *Raii hiſt.* 1410. A. incana & hirſuta. *Bauh. hiſt.* 1. *P.* 2. *p.* 154.

α. B. glauca. *Glaucous-leaved Alder.*

*Leaves glaucous beneath, petioles red.*

β. B. angulata. *Elm-leaved Alder.*

*Leaves green beneath, petioles green.*

*Peduncles branched; leaves roundiſh elliptic acute pubeſcent underneath; axils of the veins naked; ſtipules lanceolate.*

8. Betula populifolia. *Poplar-leaved Birch.*

*Ait. hort. kew.* 3. 336.

*Leaves deltoid drawn out to a long point unequally ſerrate very ſmooth; the ſcales of the ſtrobiles having roundiſh ſide lobes; petioles ſmooth.*

9. Betula papyracea. *Paper Birch.*

*Ait. hort. kew.* 3. 337.

*Leaves ovate acuminate doubly-ſerrate, veins hirſute underneath.*

10. Betula excelſa. *Tall Birch.*

*Ait. hort. kew.* 3. 337.

*Leaves ovate acute ſerrate; ſcales of the ſtrobiles having the ſide lobes rounded; petioles pubeſcent ſhorter than the peduncle.*]

11. Betula oblongata. *Turky Alder.*

*Ait. hort. kew.* 3. 338. *Mill. dict. edit.* 7. *n.* 2. A. fol. oblongo viridi. *Bauh. pin.* 428.

α. foliis oblongis. *Oblong-leaved Turky Alder.*

β. fol. ellipticis. *Oval-leaved Turky Alder.*

*Peduncles branched; leaves oval obtuſiſh glutinous; the axils of the veins naked underneath.*

[12. Betula ſerrulata. *Notch-leaved Alder.*

*Ait. hort. kew.* 3. 338.

*Peduncles branched; leaves obovate acute; veins and their axils villoſe underneath; ſtipules oval obtuſe.*

13. Betula criſpa. *Curled-leaved Alder.*

*Ait. hort. kew.* 3. 339.

*Peduncles branched; leaves ovate acute ſometimes waved; veins hairy underneath; axils naked; ſtipules roundiſh-ovate.*

14. Betula daurica.

*Pallas itin.* 3. 224. *t.* kk. *f.* 4. ab. *fl. roſſ.* 60. *t.* 39. *Gmel. ſib.* 1. 167. α 2.

*Leaves ovate acuminate ſerrate, hairy on the nerve.*

15. Betula fruticoſa.

*Pallas itin.* 3. *app.* 758. *n.* 133. *t.* kk. *f.* 1, 2, 3. *fl. roſſ.* 62. *t.* 40. A, B, C. *Gmel. ſib.* 1. 167. *var.* 3. *t.* 36. *f.* 2.

*Leaves rhomboid-ovate, equally ſerrate, ſmooth.*

DESCRIPTIONS, &c.

1. The common Birch tree is known at firſt ſight, by the ſilvery colour of its bark, or rather *epidermis*, or outer thin covering to the bark; the ſmallneſs of the leaves in compariſon with other timber trees; and the lightneſs and airineſs of the whole appearance. It is of a middling or rather inferior ſize among other foreſt trees. Branches alternate, ſubdivided, very pliant and flexible, covered with a reddiſh brown or ruſſet, ſmooth bark, generally dotted with white. Leaves alternate, bright green, ſmooth, ſhining beneath, with the veins croſſing like the meſhes of a net; the petioles are half an inch or more in length, ſmooth, grooved above; and at the baſe are ovate green glands. The male aments or catkins appear in autumn, keep on during the winter, and unfold their flowers when the females appear in ſpring; they are ſituated at the ends of the twigs, commonly two together, ſeſſile, cylindric, blunt, long, narrow and pendulous; the ſcales ſeparating the flowers are roundiſh, acuminate, yellowiſh brown, and ſmooth: the female aments appear in ſpring at the ends of the ſhorter branches; they are ſolitary, at firſt upright, but afterwards nodding a little, cylindric or rather ovate, blunt, on pedicels near a quarter of an inch in length, ſhorter and thicker than the male aments; the ſcales have from two to four flowers in each, they are lanceolate, blunt, green and ſmooth. Germs two, ſometimes more, compreſſed; ſtyles and ſtigmas reddiſh[a]. Native of Europe, from Lapland to the ſubalpine parts of Italy; and of Aſia, chiefly in mountainous ſituations; flowering with us in april and may.

β. The twigs are erect in young trees, but being very ſlender and pliant are apt to become pendent in old ones; hence a variety no leſs beautiful than the weeping Willow.

γ. There is a remarkable variety, mentioned, in the Supplement of the younger Linnæus, to be found in Dalecarlia; deſcribed to have leaves almoſt palmate, with the ſegments toothed.

Other varieties, of a trifling nature, being chiefly ſlight differences in the ſhape of the leaves, are given by Linnæus, in his Flora Sueciea, from Linder—

1. With a rounder leaf, and pendent branches.
2. With a white broader acuminate leaf.
3. Brittle, with a blackiſh woolly leaf.
4. Saxatilis, terminalis, with an oblong leaf.
5. Dwarf Birch. Thal. hercyn. 20. Mat. p. alſat. 139.

The moſt common names of the Birch tree are, in Greek Σημύδα; in Latin *Betula* or *Betullus*; in German *Birke*; in Dutch *Berk*; in Daniſh and Scotch *Birk*; in Swediſh *Björk* or *Börk*; in French *Bouleau*; in Italian *Betulla, Maio* or *Maiella*; in Spaniſh *el Abedul, la Betulla*; in Portugueze *Betula, Betulla*; in Ruſſian *Beréſa*; in Poliſh *Brzoza*.

Though Birch, ſays the excellent Evelyn, be of all other the worſt of timber, yet has it its various uſes: as for the huſbandman's ox-yoaks; alſo for hoops, ſmall ſcrews, paniers, brooms, wands, bavin-bands, and wythes for faggots; and claims a memory for arrows, bolts, ſhafts (our old Engliſh artillery); alſo for diſhes, bowls, ladles, and other domeſtic utenſils, in the good old days of more ſimplicity, yet of better and truer hoſpitality. In New England our northern Americans make Canoes, Boxes, Buckets, Kettles, Diſhes, which they ſew and join very curiouſly with thread made of Cedar roots; and divers other domeſtical utenſils, as Baſkets, Bags, with this tree, whereof they have a blacker kind[b]; and out of an excreſcence or fungus from the bole, boiled beaten and dried in an oven they make excellent Spunck or Touchwood, and Balls to play withal; and being reduced to powder, it is an infallible remedy in the Hæmorrhoids. They make alſo not only this ſmall ware, but even ſmall-craft, Pinnaces of Birch, ribbing them with white Cedar, and covering them with large flakes of Birch-bark, ſew them with thread of Spruce-roots, and pitch them; as it ſeems we did even here in Britain, as well as the Veneti[c]. Alſo for fuel: in many of the Moſſes in the weſt-riding of Yorkſhire, are often dug up Birch-trees, that burn and flame like Fir and Candle-wood; and Pliny ſays, the Gauls extracted a ſort of bitumen out of Birch. Great and ſmall Coals are made by the charring of this wood; as of the tops and loppings Mr. Howard's new Tan. The inner white cuticle and ſilken bark, which ſtrips off of itſelf almoſt yearly, was anciently uſed for writing-tables, before the invention of paper: and there is a Birch-tree in Canada, whoſe bark will ſerve to write on, and may be made into books, and of the twigs very pretty baſkets. With the outward thicker and coarſer parts of the common Birch are divers houſes in Ruſſia, Poland, and thoſe poor northern tracts covered, inſtead of ſlates and tile; nay in Sweden, the poor people grind the very bark, to mingle with their bread-corn. 'Tis affirmed by Cardan, that ſome Birch-roots are ſo very extravagantly veined, as to repreſent the ſhapes of beaſts, birds, trees, &c. Of the whiteſt part of the old wood, found commonly in doating Birches, is made the ground of our *effeminate farinad Gallants ſweet powder*; and of the quite conſumed and rotten, is gotten the beſt mould for the raiſing of divers ſeedling of the rareſt plants and flowers; to ſay nothing here of the magiſterial faſces, for which anciently the cudgels were uſed by the Lictor, for lighter faults,

[a] Pollich.

[b] Beverg. n. 1.

[c] Lucan's Pharſalia.

faults, as now the gentler rods by our tyrannical pædagogues[d].

To this ample, and in ſome parts quaint account by our venerable planter, we may properly add the information of more modern times.

The wood of our Birch is very white: women's ſhoe-heels and pattens, and packing-caſes are made of it. It is planted along with haſel, to make charcoal for forges. In the northern parts of Lancaſhire they make a great quantity of beſoms with the twigs for exportation[e].

The bark is of great uſe in dying wool yellow, and particularly in fixing fugacious colours. For this purpoſe it is beſt to uſe it dry, and to diſbark trees of eighteen or twenty years growth, at the time when the ſap is flowing. The trees ſhould ſtand, and be cut down the following winter. The Black American Birch may be applied equally well to the ſame purpoſe[f].

The highlanders of Scotland uſe the bark for tanning leather, and for making ropes: and ſometimes they burn the outer rind inſtead of candles. With the fragments dexterouſly braided, the Laplanders make themſelves ſhoes and baſkets; they uſe large thick pieces ſet out, with a hole in the middle to fit the neck, for a ſurtout to keep off the rain. The Ruſſians, Poles, and Norwegians cover their houſes with it, laying turf three or four inches thick over. In Kamtſchatka they make hats and drinking cups of it.

The wood was formerly uſed by the Scotch highlanders for their arrows; but now by the wheelwright, and for moſt ruſtic implements; by the turner for trenchers, bowls, ladles, *&c.* and when of a proper ſize it will make tolerable gates, rails, *&c.* In France it is generally uſed for wooden ſhoes. It affords good fuel, ſome of the beſt charcoal; and the ſoot is a good lamp-black for printer's ink. The ſmall branches ſerve the highlanders for hurdles, and ſide fences to their houſes. Moxa is made of the yellow fungous excreſcences of the wood, which ſometimes ſwell out from the fiſſures. The leaves afford good fodder to horſes, kine, ſheep and goats. The ſeeds are the favourite food of the Siſkin or Aberdevine; and this tree furniſhes food to a variety of inſects.

The vernal ſap of the Birch tree is well known to have a ſaccharine quality, and to make a wholeſome diuretic wine. In the beginning of march, while the ſap is riſing, and before the leaves ſhoot out, bore holes in the bodies of the larger trees, and put foſſets therein made of Elder ſticks with the pith taken out, ſetting veſſels under to receive the liquor. If the tree be large, you may tap it in four or five places at a time; and thus from ſeveral trees you may draw ſeveral gallons of juice in a day. If you do not get enough in one day, bottle up cloſe what you have, till you get ſufficient for your purpoſe, but the ſooner it is boiled the better. Boil the ſap as long as any ſcum riſes, ſkimming it all the time. To every gallon of liquor put four pounds of ſugar, and boil it afterwards half an hour, ſkimming it well; then put it into an open tub to cool, and when cold tun it into the caſk; when it has done working, bung it up cloſe, and keep it three months; then either bottle it off, or draw it out of the caſk when it is a year old[g].

The Birch, ſays our ancient Gerard, ſerveth well to the decking up of houſes and banquetting rooms, and for beautifying of ſtreets in the Croſſe or Gangweek, and ſuch like.

If this tree ſerves ſuch purpoſes no longer, it deſerves however to be planted in parks and ornamental woods, to increaſe the variety; and its fragrant ſmell after rain juſtly entitles it to a place in the wilderneſs[h]. The ſtem being ſtraight, the bark ſmooth and white, and the foliage neat, the Birch has a picturеſque appearance when properly placed in ornamental plantations; either in the openings here and there, to ſhow the foliage and hanging down of the twigs, or within to diſplay its ſilvery bark through the gloom[i].

But from what has been ſaid, the Birch, though in the loweſt eſteem as a timber tree, may yet deſerve to be cultivated, not merely as an ornament, but for its various uſes; eſpecially ſince it will grow to advantage upon barren land, where better trees will not thrive: it will flouriſh in moiſt ſpringy land, or in dry gravel and ſand, where there is little ſurface: upon ground which produced nothing but moſs, theſe trees have ſucceeded ſo well as to be fit to cut in ten years after planting, when they have been ſold for near ten pounds the acre ſtanding, and the after produce has been conſiderably increaſed; and as the woods near London have been grubbed up, the value of theſe plantations has advanced in proportion: therefore thoſe perſons who are poſſeſſed of ſuch poor land, cannot employ it better, than by planting it with theſe trees, eſpecially as the expenſe of doing it is not great.

2. [The Black Virginia Birch has the larger ſerratures of the leaves deeper and more remote, and beſides theſe it has very ſmall, fine, crowded ones; the baſe from an obtuſe angle is quite entire. The twigs are pubeſcent, and the petioles villoſe[k]. The branches are ſpotted, and more ſparingly ſet on the tree than in our common ſort. The leaves are broader and grow on longer petioles. It arrives at a much greater ſize, for it grows upwards of ſixty feet in height, and is equally hardy with the European white Birch. It has been hitherto propagated chiefly for ornamental plantations; but it is to be hoped that it will be admitted alſo among our foreſt trees[l]. It was introduced in 1736, by Peter Collinſon, Eſq.[m]

There are ſeveral varieties of this ſpecies, as 1. Broad-leaved Virginian Birch. 2. Poplar-leaved Virginian Birch. 3. Paper Birch. 4. Brown Birch, *&c.*

3. The leaves of the Canada Birch are ſmooth, very finely and ſharply ſerrate. The female catkins are ovate, ſeſſile, with acuminate entire ſcales[n]. It grows ſixty feet and more in height. The liquor flowing from its wounds is uſed by the inhabitants of Kamtſchatka without previous fermentation; with the wood they build ſledges and canoes; and they convert the bark into food by ſtripping it off when green, and cutting it into long narrow pieces, like Vermicelli, drying it, and ſtewing it with their Caviar[o]. It was cultivated in 1759, by Mr. Miller[p]. Of this there are alſo ſeveral varieties.

4. The European Dwarf Birch is an upright ſhrub, ſeldom above two or three feet high. *Trunk* hard and ſtiff, with a roughiſh bark like that of the Elm, of a ruſſet, or blackiſh purple colour. Branches ſlender ſpreading ſtraight ſcattered tapering woolly ſomewhat gummy at the ends. Leaves commonly three from each bud, but frequently ſingle and alternate, rather more in breadth than length, having from ten to fourteen notches about the edge, entire at the baſe, ſmooth, gloſſy, veined on both ſides: petioles very ſhort, ſmooth and compreſſed. Sometimes the leaves are ſeſſile or nearly ſo. Stipules in pairs, ovate, concave, upright, ciliate, brown, permanent. Catkins oval erect ſeſſile half an inch long. Styles purple[q].

Native of the northern parts of Europe; flowering in may.]

Mr. Miller ſays, it is preſerved in ſome curious gardens for the ſake of variety, but is of no uſe here. [It is however of ſignal uſe in the œconomy of the Laplanders. The branches furniſh them with their bed and their chief fuel; and the ſeeds are the food of the Ptarmigan, which makes a conſiderable part of their ſuſtenance. The Moxa alſo is prepared from it, which they conſider as an efficacious remedy in all painful diſeaſes[r].

[d] Silva edit. 4. 1706. fol. B. 1. c. 17. p. 89. [e] Withering. [f] Dambourney. [g] Lightfoot. [h] Boucher.

[i] Gilpin's for. obſ. 1. 66. [k] Linn. [l] Hunter. [m] Hort. kew. [n] Linn. [o] Hunter. [p] Hort. kew. [q] Withering, Lightfoot. [r] Hunter & Linn. lapp.

@A ' 0F :' 0!! D 18' ' 11 :' DE ' 0' ' E C' A01' A '! < < 1' M !A & ' @A :' < :' A ' 8 18 ' ' <:' D ' 1D ' 1' A0F 18' 0F :' 1 ' ! 0 ' ' F0 ' < 'D E' 1 !A D' ! 1 ' 1D 1 0 A ' @A ' <0 '!0 6 1'A0:' 0'D 1 '0 0 01! ' <' A0F 18' C 16 D' !0 : ' ' :' 0' 10 F ' 'H A' N< I !0:' 01D' C0:' 1 D ! D' 1' %$,)' E' P ' ?0< :' D 1 ,' @A ' ! << 1' N D ' 0 0 :' 8 1 0 E' 0:' 0' A ⁒' 6' C 'A C F '8 C' '0'! 1 D 0 ' ' A E F ' ' E' 1' A 8A ' @A ' 0 6' :' 0!6 A' 1' D' :' ' '! :' @A ' C D' :' D' 01D' ' @A ' 0F :' 0 ' '0' D0 6' 8 1' ! 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D' 1 ' < :' C 1' A <' 8 1 ' A C F ' 6 :' A <' D ' 1D ' 01D' 0E:' A0 ' A E' D '1 ' 1 E' 1' A ' ' 1' A ' C ' 1' A :' M !A ' A ' <0 ' !0 6 1' A0:' 10 ' !0 :' A ' < DD ' 1 ' 0 8 '01D' F0 ' A ' C ' D ' 1 :' 10 C ' 0 6! 0 '0 ' ! 1!0F ' 0' 1 1 ' 0< 1:' C F ' 1 D' 1' A ' < DI D ' ' A ' !0 ' @A ' <0 ' :' 0 '0' !0 6 1 ' ! < ' D' 'A S 1 0' !0 :' C D 1 18' C0 D:' <' 0' 10 C' 8 11 18' A D' 0 ' A ' ' C ' ' A C D' 0 ' A ' 0 ' @A ' :' 1 ' !0 E ' ! 0' <' ! < @!D' 1D D'C A'0' < <I 010! :' C 18 ' C ! D ' C A' 0' 18 ' D < 1 ' '0' D' 1' 0!A ' E :' C ' D' . 6 ' A0 ' ' A ' <⅋' ! D0 ' 1 ! D' 1' A ' N D ' A ' <0 '!0 6 1' A0:' A ' <0 E' !0 :' 0 8 '01D' ! I D0 ' ' 0!A' 'CA !A' A ' <0 ' ! 1D0 E' 1 :' 0 '011 D' CA !A' 0 ' A ' ! 0:' A :' :' CA! ' 10 D' 01D' 0 D' 0< 1:' ' C A' C ' ! D' 01 A :' @A ' <0 ' :' 0' ' '01' F0 8 0' <' ! < D' ' ' !0 :' <' 0' 10 C' 8 11 18' C D 1 18' 1 ' 0' ' 01 F DE' 18' D ' CA !A' :' D' 1' A ' ' D8 :' 01A' A0:' C ' C :' @A ' :' 1' !0 E ' ! 0' <' ! < @ D' C ! D' E :' C ' !0 '0'! < D' C ! D' 1 ' ! F D' C A' 0' 1E' A0 D' A :' 1' !A' ! ' 0' < A' 0 ! !D' 1: A0 D' 1D D' D' J E' 0! < 10 ' 1' A ' D ' 0 ' H0 F ' ' ' <' 0 01D' ' 0 0 '01D' ' N 0' <' A ' A ' 0' ' < 1 ' 0 !0 :' 1' C '01D' 88E' 8 1D:' 01D' 1' A ' 016:' ' I F :' C 18' C A' :' 1' < 0 !A' 01D' 0 P ' P ' 0 E' 1 1D 18' ' < F ' A ' 0 ! ' 5' ' A0 ' ' 7 - % ⁋ A0:' 1 E' < D' A ' < ' 1' A ' 8A A' ' D 1' 'A :' D ' 10 E' 1' A ' F 1 A' D 1' A ' <06 :' A ' ' ! :' ' A ' N D! ? %' N 1 :' F ' F0 :' 8 :' -'E6 ' 4 ' 6 -' . !2 - ' - 6-5' N ' 1D 0' 8 1 0' F ' D :' 7 %4 ' !' +)3' ⁋' ' %! - 6 - - ) ' N ' : F0 01!! 0 :' < 0 8 1 :D 1 0 :' - ' . ' 6 - ! - -' - 6-5⁋ ! -! - ' !' - ' - ' N ' ' 18 ' F D ' 7 %4 ' !' +)3' J -' ! - 6 - ' - ' '1' # ' N ' < 0' ⅵ ' 1D ' 0 ' =6 ' - . ' ' %! ' - -' - ' N' < 1 010 ' 0 '! ' 8 1 ' 0 '7 ' % ' ' . 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O 01' N '' 1' A' N ? @A 'C D' ' A 'N D ' :'F0 0 ' ' :' :' < :' ! :' 01D' 1'8 1 0' '0 ' C 6:' 1 1D D' ' ' ! 1 01 E' 1D ' C0 ' ' :' 0 D' ' A0F ' 1' D' 1D ' A ' O 0 '0 ' " 1 ! ⁒ 01D' C ' 0 ' D' A0 ' A ' < 0 :' 0 ' O0F 110' C ' D' C A' ' 1' D ' ' 0E' A ' 1D0 1:' ' D 18' 17 ' 1' L 01D :' 01D' 5 01D' ' :' 0 D' 1' 0 1D01! ' ' A :' ' ' F :' 0 ' <01E' D < ! 01D' 0' :' 0:' '!0 CA :' 1' 1 18 CA :' < 6 F :' C :' 1:' <0 ' 0E:' 1!A :' 01D' A ' 1 E' C0 ' 8A:' A01D :' ' :'! 8:' 0 1:' C D 1' A :' @A ' :' 01D' 61 :' 1 A' 0' 0 'F 1 D' C D' ' !0 1 :' @A ' ! !A' A 8A 01D :' 1' < 06 '!A0 :' ' ' CA !A' 0 'F E' A01D < '01D' A ' ! ' ' <0A 801E' @A 'C D' CA !A' A0:' 0 1' 1' 8:' :' 0!6' 6 ' 1E' ' :' F E' 8 1 0 E' 01 D' ' ! I ! ' C D' ' ! ' D C1' F E' 1 1 A' ' 1 A' E 0 ' ' :' N1D' A ' 01!A :' < 06 '8 D' !A0 I ! 0 @A ' 0 6' :' D' E' DE :' 011 :' 01D' 0 A ' D :ⅇ 0 ' E' A < 1' ' A ' 1 :' M A' A :' 01D' A ' E 18' :' DE ' E C ' 01D' C A' 0' ' ! 0:' 0' E C A' 8 0E' F E' ' 1' A ' D < ' :' 01D' 0D C :' ' "' 1' 0 E' @A ' :' ! ' 1' < 0 !A' C ' DE ' 0' ! 110< 1' ! ⅇ 01D' 0' 1 ' 0C1E' ' A E' ' D D' 01D' CD D' @A ' ' C D' E D :' 0' DE ' A ' ! ' 0 ' 1 @A ' !0 6 1:' DE '8 1' @A ' 0 6' :' D' 0:' 0' 0 :' ' 0!6:' ⅈ 01' 1!' ' ' D D' 01D' CI D D' D' 1' A ' J 0 :' '0' 1 ' 'C0 ' C A' 01' J 0' J 01 E' ' 8C D' C A' 1' ' ! ' 1' 01D' < A' '8 0 1:' ' 0!A' 01D' C ' D :' ' 1' ' 1' F ' C ' DE ' 0' 18' D ' %- - 1 5' @A ' 0F :' A0F ' 1' < < :' < E D' 1' 011 18' 0 A ' @A ' 0 I 01D :' !A C' A ' 0 6 ' 01D' DE ' A ' 0 A ' 1 8 0 I < 1 :' D' C A' A ' 0 F0 ' @A 'CA ' ' :' F E' 0 18 1 @A ' N D ' <06 :' 8 D' A D8 :' E' A ' D :' ' 0 < :' 01D' D !A :' 01D' 1' 0 ' C ' < 0 E' :ⅇ 01D' F :' ' 6 ' ' A ' 016:ⅈ' ' ' ' 01 D' 1' 0' C' < 0D C ' :' 0 D' A0 ' A ' 8 1D' 1D 18' C ' ! < ' 88Eⅇ CA 0:' 'N ' ' 01 D ' A ' :' 'CA !A' 1 0 ' 0' 8 0' C0E' 01D' 1' 1 0 ' A ' 0! ' A ' 8 1D' C ' I ! < ' <'01D' D E' @A ' 0D ' ' N D ' <:' ' '1 ' <0 0 ' < D < 1 ' ' A ' 8 C A' '8 0 :' @A ' 8A:' ! ' 1' << ' 0D' F ' A ' 01D' X1D' ' D 18' A ' C 1 ' ' ' 0 ' 1D' '01' C '0:' 0' <01 ' ! 0 18' A ' 8 1D' 1' <0 !A ' ' A ' 1D!!0E D' 0 :' 01D' A 1' 8A 18' ' @A ' A' 80 A D' 0F :' 0 ' ! F D' C A' 0' 8 1 :' J ' 1' CA !A' 0:' 0 ' 0 D' ' 1 018 ' A < ' ! F :' 0:' D:' D ' 1' D < ' 11 :' 0E:' A0' I A ' :' ! 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' 1 D' 0!6 ' 01D' ' :' D' E' <!' '
1:' 1 ' ' 'CA < ' ' A <'
$''@A ' A 0 E' ' F 0F!D' N D ' :' 0 E'
D 1! ' <' A ' ! << 1' ' A' 1' AT' !'
' ' :' 0 :' 01D' :' ! ! 1 < !0' !:!' '
1 F ' 0 0 1:' A ' ' ' A0 ' 01D' :' ! << 1 E'
A E':' A ' 16' :' !0 ! E' A !6 ' A01' A ' A !
<01'0 <!' A ' C D' :' CA ' 01D' '0' ! ! ' I
' M 01!A :' 01D' C 8:' F 1' D0! 0 ' A 0 E'
D F 8 18' 0 ' A0 '0' 8A ' 018 ' 0F :' 1 ' 1D'
' F0 ' D 0C1' '0 ' A ' 1D' 1 J 0 E' 0 '
C A'F E' 0 ' A :' < < :' D E ! 0 '
C A'F E' ' 1! 1:' F E' < A'01D' <!'
CA0 '8 1 :' F 1' 1 0 A' ! '0 ' A ' D F 1:'
' A '1 F :' CA ' A E' A0F '0' ! ! A !6' '
! 1! ' @A ' <0 '!0 6 1:' 0 ' '0 ' A ' 1D:'
' A ' 01!A :' 0 E' E' A :' A E'0 ' C ' 1!A :'
18' A ' A !61 :' '0' C01 :' J ' 01D' A ' !0 :'
8 1 :' L <0 ' !0 6 1:' 1 ' 1' 0!A' D ? 0F '
!18' C ' ' A ' 1D :' C 1' A ' A 1 18' C1'
0! :' !0 :' ! < 18' ' C A' 0' 0' ' C '
0 10 ' 1' A ' D 1! :' CA 1' 1' 5 C ' A E'0 '
'T' C1 '8 1' ! ' 01D' '01' 18' !E '
1D !' <'-' CA 1' ' A E'0 ' <0 ! ' A01' A !'
' A '! << 1'N D ' 1 ' D F0 !0 ' 01D' 1' A '
! :' D 1' ;
H0 F ' ' A '0 1 '01D' 0 1 ' 0 :' ' C I
S 01D' G0 A 1 ' 1' 0 1' ' 0 ' 1' A ' 01D:'
E 1D' ; 0< !A0 60' ' ' ' C0:' 1 D ! D' A '
1' %$3-' E' P '? A1' M A
"0 :' ' A ' 5 0 E' N D ' 0 ^ ' @A ' I
0F D' 7! % ' ' =% ' /- ' H -' ^'
)' GC0 ' N 1 ' 7 % ' ! ' 7 - "' ! ' /- '
G - "' !' ! ' H - ' E ^ #' 18 0F D' 7 % '
! ' H - '# ^ + ' O C D'-' C A' ! 0 6!'
' 06 :' D ! D' <' A ' <0 ' !0 6 1' H - '
3' H0 F ' 'H A' N< !0' F0 D' 1' !%$&-'
E' N !A 0 D' G 6 ' ' N 8E
'' @ :' :' 0 '0' 10 F ' 'H A' N< !0-' 01D'
C0:' ! F0 D' 0 ' A ' 0< ' < ' E' A ' 0< ' 1 '
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0 '%$,$' E' P '?0< :' D 1 '
+' @A ' 0F :' 0 ' 18 ' 10 C ! ' 01D' 1 ' '
8 1 :' 0:' A ' ! << 1' -' A E'0 ' 0 '1 '
' 8A' 01D' 0 ' '0' A 11 ' ! 1 D 1! ' :' F E'
! << 1' 1' N 0' 01D' 5 180 E ' CA 1!' P '
P ' ! F D' A ' D:' .701D ' ! F0 D' ' 1

%)' H0 F ' ' 1 E F0 1 0 ' F0 D' <' %$&' '
E' ' 1 1' J
%#' H0 F ' 'H C 1D 01D' 01D' 5 D 1 :' M0E'
1 D ! D' 1' %$3)' E' A ' 5 D 1 :' M0E' <
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%+' @A :' ! :' CA 1' E 18' :' !0 ! ! E' '
' D 18 A D' <' ! << 1' M !A' ' E' A '
0F :' 'D :' 1 '8 C' ' 0 '01D' A ' 16' D !:'
1 ' ! D' 0' ' 1' D 0< ' @A ' 0 6' :' 8 0E'
! ' 18 D 10 E' 01D' D F D :' 1 ' C1' !0 :'
A0 ' A0F ' A ' 0 0 01!' ' 18' 1 ' @A '
01!A :' 0 ' < ' D F D D' 01D' < ' 8A '
@A ' 0F :' 0 'A0 D ' ! << 1 E' <0 ! ' 1' A '
:' 1 J 0 E' 0 ' :' 01! 0 '8 0E'
1 ' D ! D :' P 0 '!0 6 1:' 0 ' A ' 1D:'
' A ' C 8:' ' A ' : 8 18' E 0 ' C ' ' A ' I
8 A ' 0 8 ' A01' 1' A ' ! << 1' M !A' L <0 :'
<' A ' < ' C 8:' 0 0 ' A !6 '' C A' 0 8 '
01D' < ' 1D D' !0 :'! A ' D' 0 ' :' 0' '
L 8 ' ' A ' < < 01 ' CA !A' 1D:' ' :
' 10 C ' 'D :' <' A ' M 0!6' N < !01' M !A'
1' A0F 18' <0 ' :' 01D' A ' 0F :' :'
J 1 E' 01D' 1 F ' D E' 0 ' @A ' C D' '
A :' ' :' A0 D' E C ' A01' A0 ' ' A '! << 1
' '01D' 1' D' :' <0 D' C A' C1' 01D' 8 0E'
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%&' @A :' :' 0 C0E:' A E' 18' C A' F! 0'
M <:' <' A ' 0< ' 1' 88E' 0! :' 1 '01' 1!A'
A !6 ' 1 ' A 8A ' A01' 0' < 01 :' ' 1' < 1 0 1:' '
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< !A' 01!A D' <' ' ' < ' 01D' '0' F E'
D 1' A0 ' <' A ' ! << 1' M !A' @A '! I
! ' :' 0 ! D' C A' 01 F ' :' @A '
C D' :' 1 ' ' CA ' 01D' 5' C0F D' 01 F E'
@A ' C 8:' 0 !' 0 < '! F D' C A' A ' ' 1 :'
D :' CA !A' 0 ' 1D' < ' ' :' 1' A ' A ' I
! :' @A ' D:' 0 ' <7 ' ! :' 01D' 0 C0E:' 0 I
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C0 D:' A ' '01D' C0 D:' A ' 1D' CA !A' :'
F E' A0 ' 1 J 0 E' 0 :' A E' 0 ' ' A01'
1' A '! << 1' '01D' D !0E' 1 ' @A ' <0 '
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<' !E 1D ! ' 01D' 18 ' A01' A ' M! 0'
1010!0 !0 :' 10 C D' 0 ' A ' 0 ' GA 6 D' <&'
A ' 1D' A ' < DD ' 8< 1 ' 18 ' A ' D ' 1 :'
J E' 1!0 ' @A ' 0 ' A ' D:' ' 0!A'
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N 1D01 ' 1' <0 :' 01D' 1' !6E' < 1 0 1:'
01D' 1' A ' ! D' 0 1 ' 8 1:' ' 0 1' 0'
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' @A ' '(' < A D' '! F0 ' A ' M !A' ' :'
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CA ' A E' 10 0 E' 8 C ' 0 D' 0 ' 8 1 0 E' 1D'
A ' 1' 8 0 ' 1 E-' ' 1' 0!:' CA ' A 0 !'
1 'E 18' 01 :' ' ' ! D' 1 0 ' A E' <0E' '
0 D' <' D:' CA !A' A ' '!0 E'80 A D'
1' A ' 0 <1' 00' 1' 0:' A ' !0 :' 1D ' CA !A'
A E' 0 ' D8 D' 8 1' ' 1' A C ' A E' C '
1' 0 ' ! '01D' ' '(' A ' D:' 18' <0 '
A D' 1 ' ' D' D ' 1' A ' 8 1D'-' 0' J 0 '
'01' 1!A' :' ! 1
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' C 18' A <'(' ' P ' M !A ' D D:' A0 '
A0F 18' 0D' A ' D:' A 1' 1' 0' ' ' 'D E'
A E' A ! D' '< D' 7 A' ' 0 D' 01D' 6 ' 1'
01' 0 E' 0! ' ' A ' 8 11 18' ' <0 !A' -' CA 1'
' A E' A D' ' C 18' 1' ' 8A ' 01D' ' 1!A D'
' D 8' A' ! D 18' 0 <1 ' <0D ' F E' '
06 D' 1 ' 01D' D F D D' 1 ' D:' A ' ' 01D' 0'
A0 ' C D ' H 0 A' A D' ' A C1' F ' A < '
' A E' A D' ' ! 0 D' 1' C A' A ' 0!6' '0'
0D ' A ' C 0 A ' ' D E' 01D' E' 0' '
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@A 1' A '8 1D' 18' 6 ' ! 01' A ' ' ' '
8 1 ' C0 18:' <0E' ' 8 F 1' 0 ' 1 1' 1' 0 '
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M01D' A ' C 'E 0 :' ' A ' ' A E' A0F ' <0D '
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01 :' C ' A F ' ' A01' CA 1' A E' 0 D'
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0 1'!8 0 ' A0 ' :' 1 ! 0 E' ' 'D 1 ' :' ' ' % '
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Since it is found by a chemical analyſis to poſſeſs much the ſame qualities as *Verbeſina Acmella*, it is probable that it might have the ſame good effects in expelling the ſtone and gravel.

The ſeeds have been ſometimes known to deſtroy gold-fiſh, by adhering to their gills and jaws [s].

2. Dillenius firſt marked this for a diſtinct ſpecies. Haller thought it to be no more than a variety of the *cernua*, in which he has been followed by all our Britiſh botaniſts. Mr. Lightfoot obſerves that the flowers are ſometimes nodding, and takes it to be either an autumnal ſeedling from an early plant of the *cernua*, or to be rendered dwarfiſh by accident. They appear to Dr. Stokes to run into one another, or rather to be the ſame ſpecies, differing only in ſize and the number and inclination of the flowers. Mr. Woodward has often ſeen it mixed abundantly with the *cernua*; and in the dry ſummer of 1779 many plants of this appeared in a pond then much dried up, and on the borders of which the *cernua* always grew in great plenty. Mr. Curtis obſerves, that ſometimes in very dry ſeaſons, the *cernua* is found in ſo dwarf a ſtate as not to exceed two or three inches in height; that Dillenius finding it in that ſtate, deſcribed and figured it in his edition of Ray's ſynopſis, as a diſtinct ſpecies, and that Linneus, relying probably on his authority, adopted it as ſuch in his Species Plantarum.

Hence we may preſume that our plant is nothing more than a ſtarved variety of the fifth ſpecies: but Retzius cautions us not to take a dwarf variety of *B. tripartita* for *B. minima* of Linneus. He remarks, that the firſt, which has a tender undivided ſtalk terminated by a ſingle flower, has a ſimple root, ſerrate leaves, and a leafy calyx with ſeveral leaflets; whereas the true *Minima* has a creeping root, leaves either entire or crenate only, and there are only two leaves under the calyx. Whether theſe diſtinctions are ſufficient to conſtitute a ſpecific difference muſt be ſettled by a more accurate examination. After all, varieties both of the *tripartita* and *cernua* ſeem to have been confounded together, and with this, if it be really diſtinct, which I much doubt.

3. This is an annual plant, riſing with ſtems eight or nine inches high, roundiſh, rough with white hairs purple at the baſe. Branches divided, ſpreading. Leaves petioled, ovate (in the garden), angular-toothed, rather blunt, ſmooth above, hairy along the veins underneath; the petioles are broadiſh. Peduncles terminating, reſembling the ſtem, the length of the leaves. Calyx cylindrical, ſurrounded with oblong leaves, longer than the calyx, ſpreading. Florets few, quadrifid, ſome quinquefid, yellow [t]. Native of the Eaſt-Indies. It was cultivated at Eltham by Dr. Sherard, in 1732 [u].

4. Stem filiform, purpliſh, ſubtrichotomous, ſix or ſeven inches in height. Leaves oppoſite or in threes, entire, rugged. Peduncles terminating, naked, one-flowered. Calyx oblong. Florets generally five. Awns of the ſeeds ſmoothiſh. It is an annual, and a native of the Cape of Good Hope [x].

5. Root annual. Stem from one to two feet high or more, upright, branched, a little hairy, purpliſh dotted with red, round at bottom, ſtriated at top; the branches oppoſite, and nearly upright. Leaves oppoſite, moderately connate, undivided, or with diſtant ſerratures, ſpreading, ſmooth on both ſides. Peduncles ſtriated. Flowers yellowiſh green, finally drooping, generally radiate. Calyx conſiſting of about ſeven leaves, linear-lanceolate, finely ſerrate at the edge, ribbed, turning back, and longer than the corolla. There are eight corollets in the circumference, hermaphrodite like the central ones, but with the tube more tumid and depreſſed: in places overflowed for a long time, they change into ligulate neutral corollets. Receptacle pyramidal, four-cornered. Seeds with four awns, two of which larger; the prickles pointing downwards [y].

[s] Lightf. [t] Linn. [u] Hort. kew. [x] Linn. amœn. [y] Curtis, Wither. Leers, Gærtn.

This flowers a month later than the *tripartita*, and in this ſtate has a ſtrong ſmell not very diſagreeable [z].

Native of moſt parts of Europe.

β. Haller obſerves, that *Coreopſis Bidens* of Linneus differs in no reſpect from *Bidens cernua*, except in having radiate florets in the circumference, and that theſe are wanting in ſome ſpecies of *Senecio*. Hence Dr. Stokes concludes, that *Bidens* and *Coreopſis* form one genus. Mr. Woodward has frequently obſerved both naked and radiate flowers on the ſame plant [a].

Found at Ditchingham in Norfolk, and Tarporley in Cheſhire: frequent in Ireland.]

6. This riſes about three feet high, ſending out many horizontal branches. [The lower pair of leaves ternate, or pinnate with five leaflets.] The flowers are produced at the ends of the branches in ſmall cluſters; they are yellow, [and floſculous with a conical diſk. Peduncles longer than the leaves. Seeds not diverging, only half as wide as they are long [b]; large, ovate-oblong, compreſſed, having callous dots thinly ſprinkled over them, crenulate, cinnamon-coloured; crowned with two ſtrong, divaricated awns with reverſed prickles [c].] It grows naturally in Virginia, Maryland, and Canada, where it is often a troubleſome weed. [It was cultivated in 1752, by Mr. Miller [d].

7. The three outer leaflets are united in this. The diſk of the flower is conical. The middle ſeeds are longeſt, and when they are ripening they diverge [e]. The ſeeds are linear, compreſſed, ſtriated, ſmooth, ſublucid, black. Awns two to five, briſtle-ſhaped, rugged, one-fourth of the length of the ſeeds [f]. Native of America; and the iſland of Tongatabu in the South Seas.

β. The plant of China and other parts of the Eaſt reſembles the American very much, but the leaflets are diſtinct, and the ſeeds have always four awns. The ray alſo of the flower is white and minute [g]. The American ſort was cultivated in 1732 at Eltham, by Dr. Sherard [h].

8. The flowers of this are ſometime wholly deſtitute of ray, but ſometimes there are one or two barren florets [i]. The ſeeds have three awns, the middle one longeſt, according to Linneus; but Willich ſays, they have only two awns. It is an annual plant; a native of Virginia; and was cultivated here in 1699 [k]. According to Loureiro, it is alſo a native of China and Cochinchina.

9. Stem two feet high, branched very much, bluntly four-cornered, upright, ſomewhat rugged: branches oppoſite, deciſſated, patulous, four-cornered, rugged. Leaves oppoſite, nerved, wrinkled and rugged, on longiſh petioles. Terminating branches trichotomous, elongated: the final peduncles longer, with ſolitary hemiſpherical white flowers. Florets numerous. Scales of the calyx ovate, convex, pubeſcent, ſhorter than the chaffs of the florets, which are very many. Anthers blueiſh. Seeds oblong, acuminate at the baſe, truncate at the top, four-cornered, crowned with three very ſhort briſtles. Chaffs on the receptacle oblong, ſharp, membranaceous, longer than the calyx, after flowering rigid, patulous. Native of Jamaica, in elevated paſtures, and on the ſea coaſt of the ſouthern parts [l]. Mr. Miller ſays it grows naturally in South Carolina, and alſo at Campeachy. [It was cultivated at Eltham in 1732, by James Sherard, M. D.[m]

10. Stems procumbent, a ſpan long, ſimple, with alternate leaves on the lower half, and oppoſite leaves on the upper half. A ſolitary branch ſhorter than the ſtem iſſues from each axil of the alternate leaves, uſually quite ſimple, leafed in the ſame manner with the ſtem. Alternate leaves lanceolate-ovate, blunt, ending gradually in the petioles, quite entire except that the loweſt have ſometimes a little notch or

[z] Curtis. [a] Withering. [b] Linn. [c] Gærtner. [d] Hort. kew. [e] Linn. [f] Gærtner. [g] Linn. [h] Hort. kew. [i] Linn. [k] Hort. kew. [l] Swartz. [m] Hort. kew.

two, beneath white with down, above ſmooth and green. Oppoſite leaves ſmaller, not ending in the petioles, but where they begin to contract they ſoon ſpread out again towards the baſe and become ventricoſe; they are ſeſſile and embrace each other at the baſe, cloſely involving two equal flowers. Scales of the calyx equal, diaphanous, weak. Florets numerous. Seeds ſlender, compreſſed at top, attenuated towards the baſe, crowned with two briſtles ſpreading horizontally. Native of Vera Cruz in South America [a].

11. This is a weakly branched ſhrub, generally riſing to the height of five or ſix feet or more, but requires the ſupport of the neighbouring buſhes to keep it upright [b]. Stem round and ſomewhat rugged. Branches long, round, divaricate. Leaves petioled, ſomewhat angular at the baſe, nerved, wrinkled, dark green, ſmooth on both ſides; nerves beneath ſubvilloſe. Peduncles terminating, oppoſite, decuſſated, ſhortiſh, ſubtriflorous; flowers peduncled, white, ovate or conical. Calyx conical, with ovate, acute, minute ſcales. Border of the corollets recurved. Anthers black: pollen fulvous. Seeds wedge-ſhaped, oblong, crowned with two awns. Chaffs of the receptacle arched at the tip, including the florets, keeled at the back. Native of Jamaica, on the cooler mountains [c]; alſo of Vera Cruz [d]. Mr. Miller received it from Carthagena in New Spain.

12. [Stem upright, two feet high. Leaves thick, villoſe, almoſt bullate; the lower ones ſimple, the upper ſubternate, ſubſeſſile. Flowers axillary and terminating, ſolitary, ſubſeſſile, yellow: calyxes ſurrounded at the baſe with ovate-oblong ſpreading leaves, five together. Seeds crowned with two awns, ciliate backwards [e]. Native of America. Now found wild in Italy. Cultivated in 1759, by Mr. Miller [f]. Annual.

13. Native of Jamaica. Annual.

14. Root annual. Stem four feet high, with oppoſite branches. Leaves oppoſite, ſmooth. Flowers terminating and axillary, ſolitary, ſweet-ſmelling, on elongated peduncles. Calyx calycled; ſegments deep, lanceolate, with a ſcarioſe border, ſomewhat reflex; the outer ones ſhorter, ciliate at the tip. Corolla radiate, florets five ovate, three or five-cleft at the end, white, with purple veins underneath, commonly barren. Central florets numerous, yellow, with a brown anther, ending in five ſharp ſegments. Receptacle flat, with ſhort chaffs. Seeds blackiſh, with two teeth; the central ones long and four-cornered; thoſe of the ray ſhorter, broader; all of them rugged at the corners. This ruggedneſs ariſes from very ſmall tubercles diſpoſed longitudinally; theſe end in minute prickles turned upwards, but they are too ſmall to be ſeen by the naked eye. Native of Mexico. It flowered at Madrid in november 1791 [g].]

PROPAGATION AND CULTURE.

1, 2, 5. The firſt, ſecond and fifth ſorts, being common weeds in many parts of Europe, are ſeldom cultivated in our gardens, but readily propagate themſelves by ſeeds, in wet ſituations.]

3, 4, 7, 12. Muſt be ſown upon a moderate hot-bed in the ſpring, and afterwards treated like other hardy annual plants, planting them into the full ground the latter end of may. They will flower in june, ſoon after which the plants will decay.

6, 8. Are eaſily propagated by ſeeds ſown in the ſpring, in an open ſituation; where, if they be permitted to ſcatter, the plants will come up the following ſpring, and two or three of them may be tranſplanted where they are to grow, and after they are rooted will require no farther care. Being annual plants, they decay ſoon after the ſeeds are ripe.

9, 10, 11, 13, 14. Are propagated alſo by ſeeds, which ſhould be ſown on a hot-bed in the ſpring; and when the plants are fit to remove, they muſt be each planted into a ſeparate ſmall pot, plunged into a freſh hot-bed, and treated as other tender plants from the ſame countries; in autumn they muſt be placed in the bark-ſtove. They will moſtly abide ſome years with proper management.

BIDENS. See *Coreopſis*, *Elephantopus*, *Spilanthus*, *Verbeſina*, *Zinnia*.

BIDENTI ſimilis. See *Siegeſbeckia*.

BIFOLIUM. See *Ophrys*.

BIGARELLA. See *Prunus*.

BIGNONIA. (*So named by Tournefort, in compliment to Abbé Bignon, librarian to Louis XIV.*)

Engl. *Trumpet-flower*, or *Scarlet Jaſmine*.

*Lin. gen. n.* 759. *Reich.* 817. *Schreb.* 1018. *Tournef.* 72. *Juſſ.* 139. *Gærtn. t.* 52.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Perſonatæ.—Bignoniæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, erect, cup-form, five-cleft.

COR. monopetalous, campanulate: *tube* very ſmall, the length of the calyx; *throat* very long, ventricoſe beneath, oblong-campanulate; *border* five-parted, the *two upper diviſions* reflex, *lower* patulous.

STAM. *Filaments* four ſubulate, ſhorter than the corolla; two longer than the other two. *Anthers* reflex, oblong, as it were doubled.

PIST. *Germ* oblong: *ſtyle* filiform, ſituation and form of the ſtamens: *ſtigma* capitate.

PER. *Silique* two-celled, two-valved: *partition* membranaceous, parallel, thickened at the ſutures.

SEEDS very many, imbricate, compreſſed, membrane-winged on both ſides.

OBS. Catalpa *has only two perfect ſtamens, and three very ſmall rudiments of ſtamens, with a five-leaved calyx. Four however, and even all five perfect, have been obſerved by Cyrilli. The form of the* Silique *in this genus is indeterminate. The* ſeeds *are always winged, though ſome on one ſide only.*

ESSENTIAL CHARACTER.

*Cal.* five-cleft, cup-form. *Cor.* throat bell-form, five-cleft, ventricoſe beneath. *Silique* two-celled. *Seeds* membrane-winged.

SPECIES.

1. Bignonia Catalpa. *Common Catalpa-tree.*
*Lin. ſpec.* 868. *Reich.* 3. 155. *hort. cliff.* 317. 1. *Mill. hort. kew.* 2. 346. *Duham. arb.* 1. 104. *t.* 41. *Cateſb. car.* 1. 49. *t.* 29.
*Leaves ſimple, cordate; ſtem erect; ſeeds winged with membranes.*

[2. Bignonia tomentoſa.
*Lin. ſyſt.* 563. *Thunb. jap.* 252.
*Leaves ſimple cordate tomentoſe beneath; flowers axillary paniceled.*]

3. Bignonia ſempervirens. *Carolina yellow Jaſmine.*
*Lin. ſpec.* 869. *Reich.* 3. 155.
Gelſeminum. *Park.* 1465. *n.* 5. *Raii hiſt.* 1769. *Cateſb. car.* 1. 1. 53.
Syringa. *Pluk. alm. t.* 112. *f.* 5.
*Leaves ſimple lanceolate, ſtem twining.*

4. Bignonia unguis.
*Lin. ſpec.* 869. *Reich.* 3. 156.
Apocyno affine. *Sloan. jam.* 1. 208. 5.
Clematis. *Plum. amer. t.* 94. *Pluk. alm. t.* 163. *f.* 2.
*Leaves conjugate; tendril very ſhort bowed three-parted.*

5. Bignonia æquinoctialis.
*Lin. ſpec.* 869. *Reich.* 3. 156. *Sabb. hort.* 2. *t.* 85. *Plum. ſpec.* 5. *ic.* 55. *f.* 1.
*Leaves conjugate, cirrhoſe; leaflets ovate-lanceolate; peduncles two-flowered; ſiliques linear.*

6. Bignonia paniculata.
*Lin. ſpec.* 869. *ſyſt.* 563. *Reich.* 3. 156. *Jacqu. amer.* 183. *t.* 116. *pict.* 91. *t.* 175. *Plum. ſpec.* 5. *ic.* 56. *f.* 1.
*Leaves conjugate, cirrhoſe; leaflets cordate-ovate; flowers racemed; peduncles three-flowered.*

7. Bignonia crucigera.
*Lin. ſpec.* 869. *Reich.* 3. 157. *vir. cliff.* 60. *hort. cliff.* 317. 3. *Gron. virg.* 1. 73. 2. 95. *Plum. ic.* 48. *t.* 58.

Pſeudo-Apocynum. *Mor. hiſt.* 3. 612. *n.* 6. *ſ.* 15. *t.* 3. *f.* 16.

*Leaves*

[a] Linn. cliff. [b] Browne. [c] Swartz. [d] Linn. cliff. [e] Linn. [f] Hort. kew. [g] Cavanilles.

*Leaves conjugate, cirrhose; leaflets cordate; stem muricated.*

8. Bignonia capreolata. *Four-leaved Trumpet-flower.*
*Lin. spec.* 870. *fyst.* 563. *Reich.* 3. 157. *vir. cliff.* 59. *hort. cliff.* 317. *Breyn. ic.* 33. *t.* 25. *Dubam. arb.* 1. 104. *t.* 40. *Catesb. car.* 2. 82.
Clematis. *Boec. sic.* 34. *t.* 15. *f.* 3. *Zan. hist.* 74. *t.* 2. *ed.* 2. 49. *t.* 33. *Raii hist.* 1329.
*Leaves conjugate, cirrhose; leaflets cordate-lanceolate; bottom leaves simple.*

9. Bignonia pubescens.
*Lin. spec.* 870. *Reich.* 3. 157.
*Leaves conjugate cirrhose; leaflets cordate-ovate pubescent beneath.*

10. Bignonia triphylla. *Three-leaved Trumpet-flower.*
*Lin. spec.* 870. *Reich.* 3. 157.
*Leaves ternate; leaflets ovate, acuminate: stem shrubby, erect.*

11. Bignonia pentaphylla. *Hairy five-leaved Trumpet-flower.*
*Lin. spec.* 870. *Reich.* 3. 158. *hort. cliff.* 497. 6.
*Leaves digitate; leaflets quite entire, obovate.*

12. Bignonia Leucoxylon. *Smooth five-leaved Trumpet-flower, White-wood,* or *Tulip-flower.*
*Lin. spec.* 870. *Reich.* 3. 158. *Swartz obs.* 233. *Pluk. alm. t.* 200. *f.* 4. *Brown. jam.* 263. *n.* 1. *Sloan. jam.* 2. 62. *n.* 47. *Rail dendr.* 114. 2.
*Leaves digitate; leaflets quite entire, ovate, acuminate.*

[13. Bignonia radiata. *Ray-leaved Trumpet-flower.*
*Lin. spec.* 871. *Reich.* 3. 158. *Fen. peruv.* 2. 731. *t.* 22.
*Leaves digitate; leaflets pinnatifid.*]

14. Bignonia radicans. *Rooting,* or *Ash-leaved Trumpet-flower.*
*Lin. spec.* 871. *Reich.* 3. 158. *hort. cliff.* 317. 4. *upf.* 178. *Gron. virg.* 73. 94. *Dubam. arb.* 1. 103. 1. *Sabb. hort.* 2. *t.* 84.
Pseudo-gelseminum siliquosum. *Riv. mon.* 101.
Pseudo-Apocynum. *Mor. hist.* 3. 612. *n.* 1. *f.* 15. *t.* 3. *f.* 1. *Park.* 1679. & 385. *n.* 6.
Gelseminum hederaceum indicum. *Corn. can. t.* 103. *Raii hist.* 1768.
β. B. fraxini fol. coccineo fl. minore. *Catesb. car.* 1. *t.* 65. *Mill. fig.* 43. *t.* 65. *Dubam. arb.* 1. 103. 2.
*Leaves pinnate; leaflets gashed: stem with rooting joints.*

15. Bignonia stans. *Branching-flowered Trumpet-flower.*
*Lin. spec.* 871. *Reich.* 3. 159. *Jacqu. amer. pict.* 91. *t.* 176. *Brown. jam.* 264. 3. *Plum. spec.* 5. *ic.* 54. *Sloan. jam.* 2. 63. *n.* 49.
B. frutescens. *Mill. dict. n.* 3.
*Leaves pinnate; leaflets serrate; stem erect firm; flowers racemed.*

[16. Bignonia grandiflora.
*Lin. syst.* 564. *Thunb. jap.* 253. *Kæmpf. ic. fel.* 21.
*Leaves pinnate; leaflets ovate, acuminate, serrate; stem twining; calyx semiquinquefid.*

17. Bignonia chelonoides.
*Lin. syst.* 564. *Suppl.* 282.
Padri. *Rheed. mal.* 6. 47. *t.* 26.
*Leaves unequally pinnate; leaflets ovate quite entire acuminate pubescent, corollas bearded, with the rudiment of a fifth stamen.*

18. Bignonia spathacea.
*Lin. syst.* 564. *Suppl.* 283.
Nür Pongelion. *Rheed. mal.* 6. 53. *t.* 29.
*Leaves unequally pinnate; leaflets ovate, rough with hairs, calyx one-leafed spathed, corolla salver-shaped.*

19. Bignonia peruviana.
*Lin. spec.* 871. *Reich.* 3. 159. *hort. cliff.* 317. 5.
*Leaves decompound; leaflets gashed; stem with tendrils at the joints.*

20. Bignonia indica. *Indian Trumpet-flower.*
*Lin. spec.* 871. *Reich.* 3. 159. *fl. zeyl.* 236. *Linn. cochinch.* 379.
Palega pajaneli. *Rheed. mal.* 1. *p.* 77. *t.* 43. *Raii hist.* 1741.
β. Pajaneli. *Rheed.* 79. *t.* 44. *Raii hist.* 1741. *n.* 2.
*Leaves bipinnate; leaflets quite entire ovate acuminate.*]

21. Bignonia cærulea.
*Lin. spec.* 872. *Reich.* 3. 160. *Catesb. car.* 1. *t.* 42.
*Leaves bipinnate; leaflets lanceolate entire.*

22. Bignonia longiflima. *Wave-leaved Trumpet-flower.*
*Ait. hort. kew.* 2. 347. *Jacqu. amer.* 182. *t.* 176. *f.* 78. *Swartz prodr.* 91. *Brown. jam.* 264. 2. *Plum. ic.* 47. *t.* 57.
B. Quercus. *Lamarck encycl.* 1. 417.
*Leaves simple oblong acuminate, stem erect, seeds woolly.*

23. Bignonia echinata.
*Gærtn. fruct.* 1. 240. *t.* 52. *Jacqu. amer.* 183. *t.* 176. *f.* 52. *Aublet guian.* 2. 648. *t.* 263, 264. *Swartz prodr.* 91.
*Climbing; lower leaves ternate, upper bijugous cirrhose; fruits echinate.*

24. Bignonia pentandra.
*Lour. cochinch.* 379.
*Leaves bipinnate, stamens five with two anthers on each, calyx fleshy coloured five-toothed.*

25. Bignonia alliacea.
*Swartz prodr.* 91. *Aublet guian.* 659. 14. *Barr. gall. æquin.* 23.
*Leaves conjugate, leaflets elliptic entire coriaceous, pedunckes five-flowered axillary, calyxes entire.*

26. Bignonia cassinoides.
*Vahl. symb.* 2. 68. *Lamarck encycl.*
*Leaves simple elliptic coriaceous, raceme terminating.*

27. Bignonia bijuga.
*Vahl. symb.* 3. 69.
*Leaves abruptly pinnate bijugous, leaflets elliptic quite entire.*

DESCRIPTIONS, *&c.*

The Bignonias are trees or shrubs inhabitants of the hot climates of the East and West Indies, and eminently beautiful. The leaves are oppofite, in fome fpecies unequally pinnate or ternate, in others conjugate, with a two-leaved petiole between the leaflets frequently furnifhed with a tendril for climbing. Flowers in panicles, large and handfome, of various colours, red blue yellow or white.

The calyx fhould be obferved, whether it be fimple or double; the corolla, whether it be regular or irregular; the ftamens, whether they be fertile or barren; the fruit, whether it be bony or capfular, in form of a filique or ovate*.

There are many fpecies, particularly from Brafil, which are not yet fufficiently known to be fettled here. *Bignonia fempervirens* does not belong to this genus, but to that of *Lafianthus*.]

1. The Catalpa is a deciduous tree, rifing with an upright ftem, covered with a fmooth brown bark, to the height of thirty or forty feet: it fends out many ftrong lateral branches, having very large, heart-fhaped (or ovate) leaves on them, placed oppofite at every joint. The flowers are produced in large branching panicles towards the end of the branches; they are of a dirty white colour, with a few purple fpots, and faint ftripes of yellow on their infide: the tube of the corolla is much fhorter, and the upper part more fpreading than in the fourteenth fort; the fegments alfo are deeper cut, and waved on their edges. [Two ftamens have anthers, and two are without*.] The flowers are fucceeded by long taper pods; but thefe have not as yet been produced in England. Mr. Mark Catefby found it growing naturally on the back of South Carolina, at a great diftance from the Engliih fettlements, and brought it into England about the year 1726. It is now not uncommon in our nurferies and plantations. [This tree has a good effect, when it ftands in the middle of large openings, where it can freely fend forth its fide branches, and fhow itfelf to advantage. The leaves however come out extremely late in our climate;] and it requires a fheltered fituation, for where it is much expofed to ftrong winds, the large leaves are often torn and rendered unfightly, and many times their branches are fplit and broken by the wind. It flowers in auguft, and is known in the nurferies by its Indian name *Catalpa*.

* Juffieu. ▸ Linn.



[The

[The branches dye wool a kind of cinnamon colour. Thunberg mentions, that the Japoneſe lay the leaves on parts of the body affected with pains, ſuppoſing them to be beneficial to the nerves; and that a decoction of the pods is eſteemed ſerviceable in the aſthma.

2. This is a tree, with oppoſite petioled leaves, the lower ones heart-ſhaped, the upper ovate, acute, five-nerved, entire, pubeſcent above, tomentoſe beneath, a hand or more in breadth; the upper ones leſs: petioles a finger's length or longer. Panicle firſt trichotomous, then dichotomous. Peduncles, pedicels and calyxes tomentoſe. Native of Japan[a].]

3. This riſes with ſlender ſtalks, which twiſt themſelves round the neighbouring plants, and mount to a conſiderable height; the leaves come out ſingle and oppoſite to each other at every joint; they remain green through the year. The flowers come out from the wings of the leaves at every joint, ſometimes but two, at other times four at each joint; theſe ſtand erect, are trumpet-ſhaped, yellow, and have a very ſweet ſcent; and in the countries where they naturally grow, they are ſucceeded by ſhort taper pods, filled with ſmall winged ſeeds.

It grows naturally in South Carolina, where it ſpreads over the hedges, and at the ſeaſon of flowering, perfumes the air to a great diſtance; it alſo grows in ſome parts of Virginia, but not in ſo great plenty. The inhabitants there call it Yellow Jaſmine, I ſuppoſe from the ſweet odour of its flowers.

[It was cultivated in 1640, by Parkinſon[b]. Cateſby ſays, that the flowers ſmell like thoſe of the Wall-flower; and that it always loſes its leaves in winter.]

4. This has ſlender ſtems which require ſupport. The leaves are ſmall, ovate, entire, and placed oppoſite at every joint; at the ſame places come out the tendrils, by which the plants faſten themſelves to whatever grows near them; the flowers are axillary, and ſhaped like thoſe of the Foxglove. They are not ſucceeded by pods in this country. Native of the Weſt-Indies.

5. This has very weak ſlender branches, which put out tendrils at the joints, with four leaves, two on each ſide oppoſite; they are waved on their edges, of a bright green, and continue through the year; the branches ramble very far where they have room; the flowers are large, yellow, and produced at the joints of the ſtalks, but they are ſucceeded by pods in this country. Mr. Miller received it from La Vera Cruz in New Spain.

6. This riſes with woody ſtems, which put out tendrils at the joints. The leaves come out on each ſide the branches, upon pretty long footſtalks, two at each joint oppoſite; they are entire, and have a fine hairy down on their under ſide. The flowers grow in looſe ſpikes at the end of the branches; they are tubulous, and do not ſpread much at the top; their colour is violet, and they ſmell very ſweet. [The calyx has a double border; the outer flat, white, ſlightly five-cleft, the inner erect, narrow[c].]

The ſeed-veſſels are hard, woody, and open in four parts.

It was ſent to Mr. Miller from La Vera Cruz, by Dr. Houſtoun. [Obſerved about Carthagena, *by Jacquin.*

7. Stem twining, rugged, when cut tranſverſely repreſenting a croſs, whence the trivial name[d].] It riſes to the tops of the talleſt trees, ſending out many branches, which have four narrow borders or wings running longitudinally, ſo as to reſemble a ſquare ſtalk. The leaves are produced by pairs on each ſide the branches; they are ſmooth and on ſhort foot-ſtalks. The flowers are in ſmall cluſters from the axils; they have pretty long tubes, ſpread open at the top, and are of a pale yellow colour: they are ſucceeded by flat pods a foot in length. It was ſent to Mr. Miller from Campeachy.

8. This has woody ſtems which riſe to a great height, climbing on the trees which grow near it, faſtening to their branches by its claſpers, and ſending out many branches, which have leaves on them growing by fours, two on each ſide, growing oppoſite at the joints, and covered on their under ſide with a ſoft hairy down, of a yellowiſh colour. The flowers are produced in looſe panicles at the ends of the branches; they are ſhaped like thoſe of the Fox-glove, are of a pale yellow colour, and are ſucceeded by flat pods, a foot long.

[Linneus ſays, that the peduncles are one-flowered, and heaped; the calyxes bell-ſhaped and entire.]

It was ſent to Mr. Philip Miller from Campeachy, by Mr. Robert Millar. [Native of Virginia and Carolina, and cultivated here in 1730[e].]

9. This has very ſlender trailing ſtalks, which muſt be ſupported; the branches faſten themſelves by their tendrils to whatever plants are near them, and extend to a great diſtance. The leaves are oblong, and green all the year; they are often ſingle at bottom, but upwards are placed by pairs oppoſite at each joint. The flowers are axillary, yellow, and ſhaped like thoſe of the Fox-glove. Theſe appear in auguſt, but are not ſucceeded by pods in this country. It grows naturally in Virginia, and ſeveral other parts of America.

10. This has a woody ſtem, covered with an aſh-coloured bark, and riſes to the height of ten feet; ſending out many ſide branches, with trifoliate leaves placed oppoſite at each joint. The flowers come out at the extremity of the branches in looſe panicles, and are of a dirty white colour. Theſe are ſucceeded by flat narrow pods. It was ſent to Mr. Miller from La Vera Cruz, by Dr. Houſtoun.

11. This riſes with an upright ſtem near twenty feet high, ſending out many lateral branches, covered with a white bark. The leaves come out oppoſite at the joints upon long footſtalks; they are compoſed of five oval ſtiff leaflets joined at their baſe, where they are narrow, but widen towards the top, where they are rounded and obtuſe; they are of a pale green, inclining to white on their under ſide; the flowers are produced at the ends of the branches four or five together, on very ſhort peduncles; they are narrow at bottom, but the tube enlarges upwards, and at the top ſpreads open wide; they are of a pale blueiſh colour, and ſmell ſweet. The pods are taper and crooked, about four inches long, with wings of a ſilver colour. It was ſent to Mr. Miller from Jamaica by Dr. Houſtoun, [and therefore was introduced here before 1733[f].

12. The trunk of this tree is of a middling ſize, with upright ſtiff branches. Leaves terminating, having five and ſometimes ſeven or eight leaflets, which are broad-lanceolate, nerved, veined and ſmooth. Flowers ſolitary, terminating, large, roſe-coloured. Calyx two-lipped; upper lip rounded; lower bifid, with ovate, ſharp teeth. Corolla irregular; tube long, narrow, a little ſwelling at bottom; border two-lipped, upper lip ſhorter, bifid, lower larger, trifid; all the ſegments rounded, waved, ſomewhat villoſe. Anthers vertical, black. Silique very long, pendulous, cylindric-linear[g].

Sir Hans Sloane ſays, that this tree is as large as any in the iſland of Jamaica, having a very great ſtraight trunk covered with a ſmooth whitiſh bark, and a very hard white wood. The petioles are three or four inches long. The leaves fall off for ſome weeks, and then the flowers come out of the ends of the twigs, ſeveral together on peduncles an inch in length: they are white, like thoſe of Stramonium, and fall off very ſoon. The pod is five or ſix inches long, browniſh, ſquare, and marked with ſeveral eminent lines.

According to Browne, it grows to a conſiderable ſize, when raiſed in a kind ſoil, and is generally looked upon as a good timber-wood; but when its growth is not luxuriant, it is only fit for cattle-

[a] Thunberg. [b] Hort. kew. [c] Linn. [d] Ibid. [e] Hort. kew. [f] Ibid. [g] Swartz.

yokes, and ſuch other ſmall conveniences as require a tough yielding wood. The juice and tender buds of this tree, are ſaid to be an antidote againſt the poiſonous juice of the Manchineel: they are indeed bitter, and may ſerve to prevent excoriations or bliſters for a time, and thereby protract the operation of that cauſtic juice, until a part of its virulency wears off, or other aſſiſtance can be obtained; but emulſions and oily medicines will be always found to anſwer much better.]

Mr. Miller ſays, 'that it riſes with an upright ſtem to the height of forty feet, in the natural country of its growth; and that the ſeeds are diſperſed by the wind to the neighbouring lands, where the plants come up in great plenty. This and the foregoing ſort have been generally confounded, but the growing plants are extremely different; for the under leaves of this are ſometimes compoſed of five, at other times of four oval leaves; and on the upper part of the branches they come out ſingle, placed by pairs oppoſite; theſe are as large as thoſe of the Bay-tree, and of equal thickneſs, rounded at their end; each has a long foot-ſtalk, whereas thoſe of the former join at their baſe to one centre. The flowers of this ſort are produced ſingle at the wings of the leaves, have a narrow tube near two inches long, but ſpread open very wide at the top, where they are cut into five unequal ſegments, which are fringed on their borders: the corolla is white, and has an agreeable odour.

[It was cultivated in 1759, by Mr. Miller[a],] who ſays that he received it from Barbadoes by the title of White Wood.

[13. Stem three inches high. Leaves compoſed of ſeven or nine leaflets, each ſegment of which is unequally crenate; the middle leaflet is three inches and a half in length, the lateral ones are proportionally ſhorter. Petioles from two to ten inches in length. The corolla is pale yellow, with red dots; the tube is two inches in length. Native of Peru, in very dry ſand[b].]

14. This has rough ſtems, which ſend out many trailing branches, putting out roots at their joints, and thereby faſtening themſelves to the trees in their natural places of growth, and climbing to a great height: in Europe, where it is generally planted againſt walls, it ſtrikes into the mortar of the joints ſo ſtrongly as to ſupport the branches, and will riſe to the height of forty or fifty feet. Leaves oppoſite at every joint, compoſed of four pairs of leaflets, terminated by an odd one; they are ſerrate, and end in a long, ſharp point. The flowers are produced at the ends of the ſhoots of the ſame year, in large bunches; they have long ſwelling tubes, ſhaped ſomewhat like a trumpet, whence this plant has the appellation of Trumpet-flower. The corolla is of an orange colour, and opens at the beginning of auguſt.

[It was cultivated here in 1640[c].

β. The ſeeds of this were ſent from Carolina in 1724, by Mr. Cateſby; and ſince that time, great numbers of plants have been raiſed, from ſeeds ſent to England from the ſame country. All theſe retain their difference: and there is an old plant of each ſort growing near together in Chelſea garden, and producing flowers every year, remarkably different in ſize and colour. The ſhape and ſize alſo of the leaves are very different[d].

15. This is an upright ſhrub, from four to eight feet in height, little branched, with a ſlender, but firm and woody trunk. Leaves oppoſite, petioled; leaflets ſubſeſſile, elongate-lanceolate, acuminate, veined. Racemes terminating, upright. Flowers yellow with red lines on the inſide of the tube. Siliques half a foot in length; with winged ſeeds[e].

Native of all the ſugar iſlands in the Weſt-Indies, chiefly in a dry, rocky or gravelly ſoil.]

Mr. Miller ſays, that he received this ſort firſt in 1739, from La Veta Cruz, where Dr. Houſtoun found it in great plenty; ſince which time he received the ſeed from the iſland of Bermuda, by the title of Candle-wood.

[16. Stem ſhrubby, climbing, four-cornered, with joints ſwelling a little, ſmooth. Leaves ſharply ſerrate, ſmooth. Flowers axillary and terminating, ſolitary, peduncled, large. Calyx five-cornered, cut half way into five ſegments, ſmooth: ſegments lanceolate, acute. Corollas purple, the ſize of a roſe. It differs from the *radicans* in having a ſtem not at all rooting, a larger flower, and a ſemiquinquefid calyx. Native of Japan[f].

17. This is a large tree, with a whitiſh aſh-coloured bark. Leaves ſpreading, petioled, with about five pairs of oppoſite, petioled leaflets. Panicle terminating; pedicels oppoſite, dichotomous. Flowers ſolitary, from the diviſions. Calyx hoary. Border of the corolla a little arched, rough with hairs, red, five-cleft: the two upper ſegments reflex, two-parted, toothletted and curled, yellow with red dots: lower ſegments rough with hairs, curled at the edge; diſk waved, white; veins, red: throat rough with hairs. The rudiment of a fifth ſtamen inſerted into the tube of the corolla, decurrent, barren: anthers two-parted. Siliques linear, flat, bent, ſtreaked. The freſh flowers immerſed in water give it a pleaſant odour, and in the Eaſt-Indies, of which it is a native, they ſprinkle it over the temples in a morning, to correct the ſtagnant air[g].

18. This is a large tree. Leaves ſcattered, often oppoſite, with three pairs of lobes; leaflets ſubcordate, the inner ones often cordate, quite entire. Flowers on the top of the ſtem, axillary, peduncled. Calyx opening longitudinally by its upper ſide, oblong, ſubcoriaceous, ſmooth, deciduous. Corolla white, border flat, five-folded, repand, and unequally toothed. The rudiment of a fifth ſtamen. Silique linear, flat, ſtreaked, having ſmall ſwellings on the ſurface. Seeds linear, waved, winged at the top.

The ſtructure of the flower differs from that of the other ſpecies; but ſince it is a tree with four didynamous ſtamens, and has a pod filled with winged ſeeds, it is clearly of this genus.

The timber is aſh-coloured, or red, ſmooth, and much uſed for a variety of utenſils in India.

Native of Malabar, Java, and Ceylon, in woods near waters[h].

19. This climbs by tendrils which come out from the joints of the branches. Each petiole is trifid, and each diviſion ſupports a pinnate leaf of five leaflets on very ſmall petioles. Each leaflet is ovate and unequally gaſh-ſerrate. Native of America[i].

20. This is a large tree, with aſcending branches. Leaflets ſmooth, oppoſite. Flower large, red, in erect, terminating racemes. Calyx a creſcent-ſhaped, thick, coloured, woolly ſpathe. Corolla ringent; with a large, curved, ſwelling tube; the upper lip truncate; the lower longer; three-parted; ſegments ovate, waved, almoſt equal. Anthers large and pendulous. Style longer than the ſtamens. Stigma ſpathulate. Silique very long, compreſſed, curved a little, woolly, four-celled, with a rectangular partition. Seeds two-lobed; lobes orbiculate, coaleſcent, having a membranaceous wing protended laterally: they are diſpoſed in various ſtrata in each cell, but are not imbricate[k].

Native of the Eaſt-Indies, and Cochinchina. Introduced in 1775, by Dan. Charles Solander, LL.D.[l]

A variety occurs near Mozambique in Africa, which has a ſmall arboreous ſtem, bipinnate leaves like the Indian, peduncles many-flowered, terminating, ſilique ſmooth, curved, compreſſed, a foot long; with oblong, two-lobed ſeeds, in three rows in each cell[m].]

21. The twenty-firſt ſort grows naturally in the Bahama iſlands, from whence Mr. Cateſby ſent the

[a] Hort. kew. [b] Feuillée. [c] Hort. kew. from Parkinſon. [d] Miller's figures. [e] Jacquin.

[f] Thunberg. [g] Linn. [h] Ibid. [i] Linn. ciff. [k] Loureiro. [l] Hort. kew. [m] Loureiro.

seeds in 1724, and many of the plants were raised in the gardens near London. This, in the country where it grows naturally, rises to the height of twenty feet, sending out many lateral branches, with compound winged leaves, each having eleven alternate wings, with spear-shaped small lobes, which grow alternate, and are entire; at the ends of the branches the flowers are produced in very loose panicles; the foot-stalks branching into three or four, each sustaining a single blue flower, with a long swelling tube, cut into five unequal segments at the top, where it spreads open. The flowers are succeeded by oval seed-vessels, which are large, flat, two inches over.

22. This is an elegant, upright tree, forty feet high and upwards. Leaves quite entire, waved, shining, opposite or ternate, two inches long, on a slender petiole an inch in length, mostly at the ends of the twigs. Racemes terminating, panicled, weak, with about forty flowers, smelling sweet, whitish; with two fertile, and three barren stamens. Siliques very slender, roundish, two feet long, frequently covering the whole head of the tree. Seeds linear, acuminate at both ends, cloathed with wool[a].

Native of the West-Indies. This beautiful tree is now cultivated in many parts of Jamaica, especially in the low lands and savannas, where it seems to thrive very luxuriantly. It grows to a considerable size, and is generally looked upon as an excellent timber tree. Its numerous flowers, and slender siliques, add a peculiar grace to its growth[b].

It is known in Jamaica by the name of *French Oak*; and in the French West-India islands, it is called *Chêne noir*.

23. This is a rambling shrub, climbing to the tops of trees by its very long and numerous branches. Leaves opposite; leaflets ovate, acuminate, smooth, quite entire, from four to six inches in length[c]. Peduncles axillary, two inches long, corymbed, having several parcels which are opposite, and composed of three, four or five flowers. There is a scale or stipule at the base of each parcel and pedicel. Corolla flesh-coloured[c]. Silique elliptic-oblong, very slightly compressed, marked with an obscure longitudinal groove on the middle of the sides, and at each edge with the rounded, protuberant termination of the partition, muricated all over with short, subulate prickles, confluent at the base. Partition flat, coriaceous, thickened at the edge. Seeds very numerous, flatted, with a very wide, membranaceous, diaphanous veiny wing surrounding them, in a double row within each cell[c]. Native of the West-Indies, Carthagena, Guiana.

24. This is a middle-sized tree, with ascending branches. Leaflets ovate, acuminate, quite entire, smooth. Flowers large, in upright, terminating racemes. Calyx tubular, five-cornered, obscurely five-toothed, permanent. Corolla of a red colour, ringent; tube thick, equal, short; upper lip concave, bifid; lower trifid; all the segments ovate, curled, almost equal. Filaments five, unequal, placed on the middle of the tube, with two oblong pendulous, equal anthers on each. Germ bluntly four-cornered: style subulate, longer than the stamens: stigma spathulate. Silique two feet long, curved, attenuated to both ends. Seeds oblong, compressed, two-lobed, with a thin membranous wing on each side. Native of Cochinchina, near rivers[d].

Loureiro has another species, under the name of *B. longissima*, which he thus describes.—It is a small tree, nine feet in height, with spreading branches. Leaves ovate-lanceolate, quite entire, smooth. Flowers large, terminating. Calyx none. Corolla white, funnel-shaped; tube very long and slender; border wide, the segments ovate, curved, almost equal, but the upper one shortest. Filaments inserted into the mouth of the tube: anthers oblong, two-celled, two on each filament. Style almost equal to the corolla; stigma spathulate. Silique long, compressed, hooked, two-valved, four-celled. Seeds very many, compressed, oblong, two-lobed, in several rows. Native of Cochinchina, by rivers.

This is not the *longissima* of Jacquin (n. 22.). Loureiro observes, that it agrees with the *Lignum equinum* of Rumphius (vol. 3. p. 73. t. 46.), or *B. spathacea* of the younger Linneus, in the length and form of the corolla, but not in the spathaceous calyx, and pinnate leaves: but Retzius has well observed, that Rumphius's plant is not the same with Linneus's. It is indeed very different from the Nür-Pongelion of the Hortus Malabaricus.

Loureiro also remarks, that the three Asiatic species which he has described can by no means be adapted to the generic character formed by Linneus from the American species, except in the fruit; and even that is not always two-celled in the Asiatic species.

25. The strong smell of Garlick betrays this plant from afar; hence its trivial title, and its name in French *Liane à l'Ail*[e]. It is a native of the West-Indian islands, and the forests of Cayenne and Guiana.

26. This species has the appearance of an *Echites*. The branches are covered with an ash-coloured bark, are alternately compressed above, and dilated under the leaves. These are opposite, two inches long, very smooth, shining, marked with many nerves but without veins, a little reflex at the edge, ending in a short point, and quite entire. Petiole very short. Raceme upright, an inch long, containing five or six flowers. Calyx bifid, with oblong, smooth segments. Corolla large, smooth, two inches in diameter. Native of Rio Janeiro[f].

27. Branches alternately compressed above, covered with an ash-coloured bark and smooth. Leaves four inches long or more: leaflets an inch and half in length, the inner ones smaller, acuminate but not much, blunt, veined, somewhat coriaceous, smooth on both sides, shining. Common petiole channelled: partial very short, edged with the decurrent base of the leaf. Raceme terminating. Peduncle jointed, compressed, broader at top: pedicels filiform, very short. Calyx bell-shaped, with the edge almost entire, and broader than the tube of the corolla. Native of Madagascar[f].

PROPAGATION AND CULTURE.

These are exotic trees or shrubs, and may be raised from seeds sown on a moderate hot-bed in the spring. They should be soon inured to the open air, to prevent their being drawn up weak. They may also be increased by cuttings, and some of them by layers.

1. The seeds of the Common Catalpa tree are annually brought over from South Carolina. The seedling plants should be placed abroad the beginning of June in a sheltered situation till autumn, when they should be placed under a common frame to screen them from frost in winter; but in mild weather they must be fully exposed to the open air. The following spring these may be taken out of the pots, and planted in a nursery-bed, in a warm situation, where they may remain two years to get strength, and afterwards planted in the places where they are designed to remain. These plants, when young, are frequently injured by frost, for they shoot pretty late in the autumn, so that the early frosts often kill the extremity of their branches; but as the plants advance in strength, they become more hardy, and are seldom injured but in very severe winters. It is late in the spring before these trees come out, which has often caused persons to believe they were dead; and some have been so imprudent, as to cut them down on that supposition, before the tree was well known.

It may also be propagated by cuttings, which should be planted in pots in the spring before the trees begin to push out their shoots, and plunged into a moderate hot-bed, observing to shade them from the sun in the middle of the day, and refresh

[a] Jacquin. [b] Browne. [c] Gærtner. [d] Loureiro. [e] Aublet. [f] Vahl. [g] Ibid.

them

them occaſionally with water, which muſt not be given to them in too great plenty. In about ſix weeks theſe will have taken root, and made ſhoots above, ſo ſhould have plenty of air admitted to them conſtantly, and hardened by degrees to bear the open air, into which they ſhould be removed, and treated in the ſame manner as the ſeedling plants, and the ſpring following planted out into a nurſery-bed, as is before directed.

The Catalpa delights in a rich moiſt ſoil, where it will make great progreſs, and in a few years produce flowers.

3. The plants of this ſort, when young, are impatient of cold, ſo muſt be ſheltered in the winter until they have obtained ſtrength, when they ſhould be planted againſt a warm wall, and in winter protected from froſt by coverings of mats, and the ground about their roots covered with tan. With this management I have had them flower very well in the Cheſſea garden.

4, 5. Will live in the open air, if they be planted againſt a wall that has a ſouth aſpect, and ſheltered in very ſevere froſt.

6, 7, 8. 10, 11, 12. Are tender, and will not thrive in this country, unleſs they be kept in the bark ſtove.

9. When this ſort is planted in the full ground againſt a wall, the roots ſhould be covered in the autumn with ſome old tanners bark to keep out the froſt in winter; and in very ſevere froſt, the branches ſhould be covered with mats, to prevent their being deſtroyed. With this management I have had the plants flower well in Cheſſea garden.

12. Will take root from cuttings planted during ſummer in pots, and plunged into a bark bed. It has flowered ſeveral years in the Cheſſea garden, in auguſt.

14. This ſort is ſo hardy, as to thrive in the open air; but as the branches trail, they muſt be ſupported, it is therefore uſually planted againſt walls or buildings, where, if the branches have room, it will ſpread to a great diſtance, and riſe very high; it is therefore very proper for covering of buildings, which are unſightly. It may alſo be trained up againſt the ſtems of trees, where it may be ſo managed, as to make a fine appearance when in flower.

It is propagated by ſeeds, but the young plants ſo raiſed do not flower in leſs than ſeven or eight years; therefore thoſe which are propagated by cuttings or layers from flowering plants, are moſt eſteemed, becauſe they will flower in two or three years after planting. The old plants alſo ſend out many ſuckers from the roots, which may be taken off, and tranſplanted where they are to remain, for theſe plants will not tranſplant ſafely if they are old.

The neceſſary culture for theſe plants after they are eſtabliſhed, is to cut away all the ſmall weak ſhoots of the former year in winter, and ſhorten the ſtrong ones to about two feet long, that young ſhoots may be obtained for flowering the following ſummer; theſe plants are of long duration. There are ſome in gardens which have been planted more than ſixty years, which are now very vigorous, and produce flowers in plenty every ſeaſon.

15. Is propagated by ſeeds ſown on a hot-bed, and the plants afterward tranſplanted into ſeparate ſmall pots, filled with light freſh earth, and plunged into a freſh hot-bed; in the autumn they muſt be removed into the bark-ſtove, and during the winter ſhould have but little water, but in ſummer they muſt be frequently refreſhed with it, but not given in too great plenty. The plants ſhould conſtantly remain in the bark-ſtove, and be treated in the ſame manner as other tender plants from hot countries. The third year from ſeed they will flower, but they do not produce ſeeds in England.

The other ſorts have not yet been cultivated in England.

BAHAI. See *Strelitzia.*

BILANUS. See *Crataeva.*

[BILBERRY. See *Vaccinium.*

BILIMBI. See *Averrhoa.*]

BIND-WEED. See *Convolvulus.*

[BINDWITH. See *Clematis.*

BIPINNULA. See *Arethuſa.*]

BIRCH-TREE. See *Betula.*

[BIRD CHERRY. See *Prunus Padus.*

BIRD PEPPER. See *Capſicum.*

BIRD'S-EYE. See *Adonis.*

———-ROOT. See *Ornithopus.*

———-TREFOIL. See *Lotus.*

BIRD'S-TONGUE. See *Senecio.*

BISTHWORT. See *Ariſtolochia.*]

BISCUTELLA. (*Dimin. from bis and ſcutum; the fruit reſembling a double ſhield.*) *Buckler-Muſtard*, or *Baſtard Mithridate Muſtard.*

*Lin. gen.* 808. *Reich.* 891. *Schreb.* 1084. *Juſſ.* 239. *Gærtn. t.* 141. Thlaſpidium *Tourneſ.* 101.

Claſs 15. 1. Tetradynamia Siliculoſa.

Nat. order of *Siliquoſæ, Cruciformes* or *Cruciferæ.*

GENERIC CHARACTER.

CAL. *Perianth* four-leaved; *leaflets* ovate, acuminate, gibbous at the baſe, colloured, deciduous.

COR. Four-petalled, cruciform, *Petals* oblong, obtuſe, ſpreading.

STAM. *Filaments* ſix, the length of the tube of the corolla; two oppoſite ſhorter. *Anthers* ſimple.

PIST. *Germ* compreſſed, orbiculate, emarginate. *Style* ſimple, permanent. *Stigma* obtuſe.

PER. *Silicle* erect, compreſſed flat, ſemibifid with roundiſh lobes, two-celled: *partition* lanceolate, ending in a rigid ſtyle; *cells* two-valved, affixed to the partition, on its ſtraight margin.

SEEDS ſolitary, roundiſh, compreſſed, in the middle of the cell.

*Obs. The two outer leaflets of the calyx in ſome ſpecies have a tubular-concave melliferous prominent baſe.*

ESSENTIAL CHARACTER.

*Silicle* compreſſed flat, rounded above and below, two-lobed. *Cal.* leaflets gibbous at the baſe.

SPECIES.

1. Biſcutella auriculata. *Ear-podded Buckler-Muſtard.*
*Lin. ſpec.* 911. *ſyſt.* 592. *Reich.* 3. 240. *hort. cliff.* 329. 1. *upſ.* 185. *Gærtn. fruct.* 2. 278.
Thlaſpi. *Bauh. pin.* 107. *n.* 3. *prodr.* 49. *n.* 8. *Raii hiſt.* 837. *n.* 4.
Leucoium montanum fl. pedato. *Col. ecphr.* 2. 59. *t.* 61.
Iondraba. *Bahr. ic.* 230.
*Calyxes gibbous on each ſide with the nectary, filicles running into the ſtyle.*

2. Biſcutella apula. *Spear-leaved Buckler-Muſtard.*
*Lin. ſyſt.* 592. *Reich.* 3. 240. *mant.* 254. *D'Alſo. aragon. n.* 603. *Gærtn. fruct.* 2. 279.
B. didyma. *Lin. ſpec.* 911. *hort. cliff.* 329. 2. *upſ.* 185.
Thlaſpi. *Raii hiſt.* 837. *n.* 3.——clypeatum. *Cluſ. hiſt.* 2. 133.
Iondraba. *Col. ecphr.* 1. 283. *t.* 285. *f.* 1.
*Silicles ſcabrous, leaves lanceolate ſeſſile ſerrate.*

[3. Biſcutella lyrata.
*Lin. ſyſt.* 592. *Reich.* 3. 240. *mant.* 254.
Thlaſpi biſcutatum, &c. *Boet. ſic.* 45. *t.* 23. *Raii hiſt.* 837. *n.* 6.
*Silicles ſcabrous, leaves lyrate.*

4. Biſcutella coronopifolia.
*Lin. ſyſt.* 592. *Reich.* 3. 241. *mant.* 255. *Allion. pedem. n.* 907.
*Silicles ſmooth, leaves toothed rough with hairs.*

5. Biſcutella lævigata. *Smooth Buckler-Muſtard.*
*Lin. ſyſt.* 592. *Reich.* 3. 241. *mant.* 255. *Jacqu. auſtr.* 4. *t.* 339. *Hall. helv. n.* 501. *D'Alſo. aragon. n.* 602.
B. didyma. *Scop. carn. n.* 804.
Clypeola didyma. *Crantz auſtr.* 20.
Leucoium. *Col. ecphr.* 1. 283. *t.* 285. *f.* 2. *Raii hiſt.* 836. *n.* 2.
*Silicles ſmooth; leaves lanceolate ſerrate.*

6. Biſcutella ſempervirens. *Shrubby Buckler-Muſtard.*
*Lin. ſyſt.* 592. *Reich.* 3. 241. *mant.* 255.
Thlaſpi biſcutellatum, &c. *Barr. ic. t.* 841. *Boet. muſ.* 167. *t.* 122.
*Silicles ſomewhat ſcabrous, leaves lanceolate tomentoſe.*]

DESCRIPTIONS, &c.

1. In a wild ſtate this plant riſes about a foot in height, but in a garden it generally grows near two feet high, dividing into ſeveral branches. At every joint there is one oblong entire leaf a little indented, thoſe on the lower part of the ſtalk being broader and more blunt than thoſe on the upper. The flowers are produced at the ends of the branches in looſe panicles; and are of a pale yellow colour.

[Silicle tranſverſely ovate, compreſſed, rugged with raiſed dots, two-lobed; lobes rounded, ſeparate at bottom, uniting at top in the ſtyle, which is much longer than the ſilicle: theſe lobes are one-celled, cloſe not gaping, but ſeparating from the axis: there is properly no partition, but only the flatted ſtyle interpoſed between the doubled ſilicles. Seeds lens-ſhaped, ovate, with an inflex beak, ſmooth, ferruginous. Seed-lobes ovate, plano-convex, thin[a].

The nectareous gland is remarkably large, and conſequently the calyx is bagged out very much at bottom, in this ſpecies[b].

Native of the ſouth of France and Italy. It was cultivated here in 1683, by Mr. James Sutherland, and flowers in june and july[c].]

2. This ſends out many oblong hairy leaves, which are ſlightly indented on their edges[d]; from among theſe riſes a hairy branching ſtalk two feet high, and at each joint is placed one oblong indented leaf, which half embraces the ſtalk at the baſe; each branch is terminated by a cloſe ſpike of pale yellow flowers; with a ſhorter ſtyle than in the other ſorts.

[The whole plant, ſtem and leaves are rough with ſcattered hairs. Stem upright a foot high, with two or three branches. Leaves lanceolate or oblong; the ſerratures very remote[e]. Silicle only half the ſize of the foregoing, either wholly ſmooth, or rugged with raiſed dots. Lobes ſuborbiculate, not confluent with the ſtyle at top, ſeceding from the axis, valveleſs. The lobes of the ſilicle being cloſe all round, except a hole in the inner margin, for the paſſage of the umbilical chord, the fruit in this genus is properly two-podded, or conſiſts of two partial ſilicles[f].

Native of Italy. Cultivated in 1759, by Mr. Miller. It flowers in june and july[g].

3. Root-leaves lyrate, reſembling thoſe of Cardamine, ſmall and hairy. Stem branching, almoſt leafleſs, naked, hiſpid at the baſe. Pedicels extremely divaricate, capillary. Silicles ſmall, rather leſs than thoſe of the foregoing ſort, ſomewhat rugged, orbiculate[h]. Native of Spain and Sicily.

4. Root-leaves lanceolate, reſembling thoſe of Coronopus, deeply toothed to the very middle with three or four teeth on each ſide, rough on both ſurfaces with diſtinct hairs. Stem-leaves claſping, cordate-lanceolate, leſs toothed, few. Silicles altogether ſmooth[i].

According to Allioni, this is a lower plant than the ſecond; and has leaves that are hiſpid and much ſhorter, deeply pinnatifid-toothed, generally with two teeth on each ſide. He thinks that it is not ſpecifically different from the ſecond; but a variety, proceeding from a dryneſs of ſoil; for it is found in extremely dry barren places, in Spain, Italy, and Germany.

Gouan is of opinion, that this and the ſecond, third and fourth are one ſpecies. According to Linneus, all theſe, with the fifth, though originally deſcended from the ſame mother, and ſiſters of the ſecond ſort, may fairly be divided into four.

5. Root-leaves lanceolate, petioled, acuminate, remotely ſerrate with ſmall ſharp upright ſerratures, naked or a little rugged, with a rugged edge. Stem a ſpot high, almoſt all leafleſs, ſmooth, towards the top forming a branched corymb. Silicles ſmooth, the ſize of thoſe in the firſt ſpecies. Columna's plant has the ſtem and leaves more hairy, and the ſtem leafy[k].

According to Jacquin, the ſtems are upright, round, ſmooth or hirſute, commonly ſimple at bottom and branched at top. Leaves oblong, attenuated at the baſe, blunt or ſharpiſh, thickiſh, either quite entire or with few ſerratures, rough on both ſides with white hairs, but ſometimes ſcarce obſervably hairy: root-leaves many; ſtem-leaves ſmaller, ſeſſile, and more entire. Flowers at firſt in a kind of umbel, but afterwards in a raceme. Leaflets of the calyx ſmooth, yellow, oblong, blunt, very concave, patulous. Petals twice as long as the calyx, yellow; as are alſo the filaments. Piſtil green. Silicle very ſmooth, ſometimes in the Alps three or four-winged. The whole plant is acrid. The root is perennial; but according to others it is annual. It is a native of Italy and Auſtria. Being found at very different heights on the mountains, it varies much in ſtature, from half a foot to a foot and half. In lower ſituations it flowers in april and may, in higher ones in july and auguſt; in our gardens in june and july. It was introduced here in 1777, by Monſ. Thouin[l]: and flowers in june and july.

6. Stems ſuffruticoſe, a hand's breadth in height, proſtrate, ſimple, the thickneſs of a gooſe-quill, leafy at top. Leaves crowded, with a thick nap like *Cheiranthus incanus*, tooth-ſerrate, with the edge bent back. The flowering-ſtem ſpringing up among the leaves, ſimple and almoſt leafleſs itſelf. Raceme terminating, compound, not much prolonged. Silicles of the ſame ſize and form as in the ſecond ſpecies. This is the moſt diſtinct of any from the reſt[m].

Native of Spain. Introduced in 1784, by Meſſ. Lee and Kennedy[n].]

PROPAGATION AND CULTURE.

They are all annual plants, except the laſt, which periſh ſoon after they have perfected their ſeeds. Theſe ſhould be ſown either in ſpring or autumn, upon a border of light earth, in an open ſituation, where they are to remain. Thoſe which are ſown in autumn will come up in about three weeks, and the plants will live through the winter without any protection, and flower earlier the following ſummer, whereby good ſeeds may always be obtained; whereas thoſe which are ſown in the ſpring, do, in bad ſeaſons, decay before their ſeeds are ripe. The autumnal plants flower in june, and the ſpring plants in july, and their ſeeds ripen about ſix weeks after; if theſe are permitted to ſcatter, there will be plenty of young plants produced without any care.

They require no farther culture, but to keep them clean from weeds, and thin the plants where they are too cloſe, leaving them eight or nine inches aſunder. They are preſerved in the gardens of thoſe who are curious in botany, but they have no great beauty to recommend them.

BISERRÚLA. (*So named from the fruit; biſerrata fructu.* Lin.)

*Lin. gen.* 893. *Reich.* 966. *Schreb.* 1209. *Juſſ.* 358. *Gærtn. t.* 154. Pelecinus. *Tournef.* 234.

Claſs. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminoſæ*.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, ereſt, ſemiquinquefid; *teeth* ſubulate, equal, the two upper ones more remote.

COR. papilionaceous: *banner* larger, reflected on the ſides, aſcending, roundiſh: *wings* ovate-oblong, free, ſhorter than the banner: *keel* the length of the wings, obtuſe, aſcending.

STAM. *Filaments* diadelphous (ſimple and nine-cleft) aſcending at their tips, incloſed within the keel. *Anthers* ſmall.

PIST. *Germ* oblong, compreſſed. *Style* ſubulate, aſcending. *Stigma* ſimple.

[a] Gærtner. [b] Linn. [c] Hort. kew. [d] Linn. [e] Gærtn. [f] Hort. kew. [g] Linn. mant. [h] Ibid. [i] Linn. mant. [k] Hort. kew. [l] Linn. mant. [m] Hort. kew.

PER. *Legume* large, linear, flat, two-celled: *partition* contrary to the valves.
SEEDS very many, kidney-form, compreſſed.

ESSENTIAL CHARACTER.

*Legume* two-celled, flat: *partition* contrary.

SPECIES.

1. Biſerrula Pelecinus. *Boſtard Hatchet-Vetch. Lin. ſpec.* 1073. *Reich.* 3. 540. *hort. cliff.* 361. *Gærtn. fruct.* 2. 340. *Rivin. tetr. t.* 101.
Aſtragalus. *Mor. hiſt.* 2. 107. *ſ.* 2. *t.* 9. *f.* 6.
Securidaca. *Baub. pin.* 349. 3. *Cluſ. hiſt.* 2. 238. *Ger. emac.* 1234. *f.* 6? *Park. theat.* 1089. *f.* 5. *Raii hiſt.* 939. *n.* 16.
Lunaria radiata Robini. *Baub. hiſt.* 2. 348. *f.* 2.

DESCRIPTION, *&c.*

This is an annual plant, which grows naturally in Italy, Sicily, Spain, and the ſouth of France. It ſends out many angular ſtalks, which trail on the ground, ſubdivided into many branches, with long winged leaves, compoſed of many pairs of leaflets, terminated by an odd one; theſe are heart-ſhaped: toward the upper part of the branches come out the peduncles, which ſuſtain ſeveral ſmall purpliſh flowers.

[Legume oblong, ſerrate on both edges, with a longitudinal ſuture in the middle, four-valved: partition very narrow, ſimple. Seeds in each cell eight, round-kidney-ſhaped, ſmooth, yellowiſh. Seed-lobes ſemi-lunar. The legume is not ſimple but double, compoſed of two partial ones, placed ſide by ſide and coaleſcent [a]. Cultivated here in 1640 [b].]

PROPAGATION AND CULTURE.

It is propagated by ſeeds, which in this country ſhould be ſown in the autumn, on a bed of light earth, where the plants will come up in about three weeks, and will live in the open air very well. Theſe ſhould be ſown where they are deſigned to remain, or tranſplanted very young; for when they are large, they will not bear removing. When the plants are come up, they will require no other care, but to keep them clean from weeds; and where they are too near, they ſhould be thinned to about a foot diſtance from each other. They flower in june, and the ſeeds ripen in ſeptember.

The ſeeds of this plant may alſo be ſown in the ſpring, and treated in the ſame manner as before directed; but theſe will not flower till the middle or end of july, ſo unleſs the autumn proves warm, they will not ripen ſeeds; for which reaſon I have directed their being ſown in the autumn, as ſoon as they are ripe. Two or three of theſe plants may be allowed a place in gardens for the ſake of variety, but they have not much beauty.

BISHOP'S-WEED. See *Ammi.*
BISTORTA. See *Polygonum.*
BITTER VETCH. See *Orobus.*
BITTERWORT. See *Gentiana.*
BIXA. (*The Indian name uſed by Oviedo in his hiſtory of India, or Spaniſh America.*)
*Lin. gen.* 654. *Reich.* 710. *Schreb.* 887. *Juſſ.* 293. *Gærtn. t.* 61.
Claſſ. 13. 1. Polyandria Monogynia.
Nat. order of *Columniferæ. Tiliaceæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth.* five-toothed, very ſmall, obtuſe, flat, permanent.
COR. double: *outer* with petals five, oblong, equal, large, more rude—*inner*, with five petals like the outer, but thinner.
STAM. *Filaments* numerous, ſetaceous, ſhorter by half than the corolla. *Anthers* erect.
PIST. *Germ* ovate. *Style* filiform, the length of the ſtamens. *Stigma* parallelely biſid, compreſſed.
PER. *Capſule* ovate-cordate, compreſſed, fenced with briſtles, bivalve, gaping at the angles, one-celled, with an inner bivalve membrane.
SEEDS numerous, turbinate, with a truncated navel, berried.
REC. linear, longitudinal, faſtened to the middle of the valves.

ESSENTIAL CHARACTER.

*Cor.* ten-petalled. *Cal.* five-toothed. *Capſ.* hiſpid, bivalve.

SPECIES.

1. Bixa Orellana. *Arnotto* or *Anotta. Lin. ſpec.* 730. *Reich.* 2. 580. *hort. cliff.* 211. *mat. med.* 135. *Gærtn. fruct.* 1. 292. *Brown. jam.* 254.
Bixa Oviedi. *l.* 8. *c.* 6. *Baub. hiſt.* 1. 440. *Cluſ. exot.* 74.
Orleana ſ. Orellana. *Pluk. phyt. t.* 209. *f.* 4. *Comm. hort.* 1. 65. *t.* 33.
Rocu. *Merian. ſurin. t.* 44.
Urucu. *Piſo* 133. *Sloan. jam.* 2. 52. *t.* 181. *f.* 1.
Pigmentaria. *Rumph. amb.* 2. 79. *t.* 19.
Arbor mexicana, fructu caſtaneæ, coccifera. *Baub. pin.* 419. *Raii hiſt.* 1771.
Achiotl. *Hernandez mexic.* 74.

DESCRIPTION, *&c.*

This ſhrub riſes with an upright ſtem to the height of eight or ten feet, ſending out many branches at the top, forming a regular head. Theſe are garniſhed with heart-ſhaped leaves ending in a point, which have long foot-ſtalks, and come out without any order. The flowers are produced in looſe panicles at the end of the branches, of a pale Peach colour, having large petals.

[Capſule ovate-cordate, turgidly lenticular, hiſpid all round with briſtle-ſhaped prickles: the valves are cloathed within with their proper membrane, and in the middle they have a prominent longitudinal groove, to which the ſeeds are faſtened; theſe are about twelve to each valve, turbinate, with a depreſſed ſtreak on one ſide, and a brown tubercle at the top, they are ſcarlet.

Native both of the Eaſt and Weſt Indies. The capſules in the latter are ovate-acuminate, ſmaller, and the prickles not ſo cloſe. Seeds ſubtrigonal, like grape-ſtones, with ſo deep a furrow as to appear two-lobed. Seed-lobes leſs flexuoſe, and the whole embryo relatively ſmaller [a]. It was introduced here in 1690, by Mr. Bentick [b].

Linnæus has adopted the South American vernacular-name of *Bixa* from Oviedo; in Holland, Denmark, and other northern countries it is known alſo by that name. In Holland it is likewiſe called *Orleane.* In German, *Orleanſtaudn, Biſchofsmutze, Anotta.* In England we have taken the latter of theſe names, ſpelling it varioully, *Arnotto, Arnotta, Anotta, Anato, Anoto, Annoto.* The French have adopted the Braſilian name *Uruku*, or *Urucu*, ſpelling it *Roucouyer, Roucou*, or *Rocurier* des Indes. The Portugueze have alſo the ſame appellation *Urucu*, or *Urucueira.* In Spaniſh it is *Anato* or *Atolle.* In the Mexican language *Achiotl.* Scaliger calls it *Arbor ſinium regundorum*, becauſe the Mexicans made plans, and marked the boundaries of their lands on tablets, with the colour prepared from the berries. Tournefort named it *Mitella*, from the reſemblance of the capſule, when open, to a mitre.

The drug called *Terra Orellana* or *Orleana, Roucou* or *Arnotto* is thus prepared from the red pulp which covers the ſeeds. The contents of the fruit are taken out, and thrown into a wooden veſſel, where as much hot water is poured upon them as is neceſſary to ſuſpend the red powder or pulp; and this is gradually waſhed off with the aſſiſtance of the hand, or of a ſpatula or ſpoon. When the ſeeds appear quite naked they are taken out, and the waſh is left to ſettle; after which the water is gently poured away, and the ſediment put into ſhallow veſſels, to be dried by degrees in the ſhade. After acquiring a due conſiſtence, it is made into balls or cakes, and ſet to dry in an airy place, until it is perfectly firm.

Some perſons firſt pound the contents of the fruit with wooden peſtles; then covering them with water, leave them to ſteep ſix days. This liquor being paſſed through a coarſe ſieve, and afterwards through three finer ones, it is again put into the

[a] Gærtner. [b] Hort. kew.

vat or wooden veſſel, and left to ferment a week. It is then boiled until it is pretty thick, and when cool is ſpread out to dry, and then made up into balls, which are uſually wrapped up in leaves. Arnotto of a good quality is of the colour of fire, bright within, ſoft to the touch, and diſſolves entirely in water.

It is reputed to be cooling and cordial, and is much uſed by the Spaniards in their chocolate and ſoups, both to heighten the flavour and to give them an agreeable colour.

It is eſteemed good in bloody fluxes and diſorders of the kidnies. Mixed with lemon-juice and a gum, it makes the crimſon paint, with which the Indians adorn their perſons. It was formerly uſed by dyers to form the colour called *Aurora*; but at preſent it is not held in ſuch eſtimation as a dye, though it ſtill maintains its ground with painters[c].

Arnotto is well known to be the drug which is uſed for dying cheeſe in Gloceſterſhire, under the name of Cheeſe-colouring. It is uſed in Holland for colouring their butter.

The bark makes good ropes for the common plantation uſes in the Weſt-Indies: and pieces of the wood are uſed by the Indians to procure fire by friction.

PROPAGATION AND CULTURE.

This plant is propagated by ſeeds, may be cultivated with great eaſe, and is planted in many parts of Jamaica, Barbadoes, Cayenne, *&c.* in rich ſoils and ſhady ſituations, ſhooting luxuriantly near rivulets.]

Here alſo it is propagated by ſeeds which are annually brought from the Weſt-Indies in plenty. Theſe ſhould be ſown in a ſmall pot, filled with light rich earth, and plunged into a hot-bed of tanners-bark; where, if the bed is of a proper temperature of heat, the plants will appear in about a month after: when theſe are about an inch high, they ſhould be ſhaken out of the pot and carefully ſeparated, ſo as not to tear off their tender roots, and each planted in a ſmall pot filled with ſome rich light earth, and plunged into a freſh hot-bed of tanners-bark, obſerving to ſhade them every day until they have taken new root; after which they muſt be treated as other tender plants from the ſame country, by admitting freſh air to them in proportion to the warmth of the ſeaſon; and when the heat of the tan declines, it ſhould be turned up to the bottom, and, if neceſſary, ſome freſh tan added to renew the heat. The plants muſt be refreſhed three times a week with water in ſummer, but they muſt not have it in great quantities, for their roots often rot with much wet. If the plants are raiſed early in the ſpring, and properly managed, they will be a foot and a half high by the autumn, when they ſhould be removed into the bark-ſtove, and plunged into the tan-bed. During the winter, they muſt have but little water, and while the plants are young, they muſt have a good ſhare of warmth, otherwiſe they are very ſubject to caſt their leaves, and frequently loſe their tops, which renders them unſightly. They muſt be conſtantly kept in the bark-ſtove, for thoſe plants which have been placed in a dry ſtove, have never made much progreſs. I have had many of theſe plants ſeven or eight feet high, with ſtrong ſtems and large heads, but have only had one produce flowers; nor have I heard of its flowering in any of the gardens in Europe, for in the Dutch gardens they have no plants of any ſize.

[BLACKBURNIA. (*So named by Forſter, in honour of John Blackburne, Eſq. and his daughter Anna, of Orſford in Lancaſhire.*)

*Lin. gen. Schreb. n.* 199. *Forſter gen.* 6.

Claſſ. 4. 1. Tetrandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* very ſhort, four-toothed, inferior: *teeth* ſhort, acute, horizontal.

COR. *Petals* four, elliptic.

STAM. *Filaments* four, ſubulate, rather ſhorter than the petals. *Anthers* heart-ſhaped, erect.

PIST. *Germ* conic. *Style* filiform, erect, length of the ſtamens. *Stigma* ſimple.

PER. *Berry* ?

SEED ſingle.

ESSENTIAL CHARACTER.

*Cal.* four-toothed. *Pet.* four, elliptic. *Anth.* heart-ſhaped. *Germ* conic. *Stigma* ſimple. *Per.* Berry, with a ſingle ſeed.

SPECIES.

1. Blackburnia pinnata.

*Forſt. gen.* 6. *t.* 6. *drawings t.* 25. *fl. auſtral. n.* 53.

Ptelea pinnata. *Lin. ſuppl.* 126.

DESCRIPTION, *&c.*

Leaves alternate, abruptly pinnate, with two or three pairs of leaflets, which are oppoſite, oblique, ovate, quite entire, and very ſmooth. Panicles axillary, ſmall.

It is in habit not unlike *Ptelea trifoliata*; and whether it ought to be ſeparated from that genus cannot be determined till we are better acquainted with the fruit.

Native of Norfolk iſland[a]. Found there in 1774.

BLACKSTONIA. See *Chlora.*]

BLADDER-NUT. See *Staphylea.*

[BLADDER-SENA. See *Colutea.*

BLADHIA. (*So named by Thunberg, from Peter John Bladh, a Swede; ſupercargo to the Eaſt-India Company, and reſident at Canton.*)

*Lin. gen. Schreb. n.* 370. *Thunberg. nov. gen.* 6. *fl. jap.* 7.

Claſſ. 5. 1. Pentandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, very ſhort, permanent, five-parted; *parts* ovate, concave, ſpreading, torn-ſubſerrate.

COR. one-petalled, wheel-ſhaped, five-parted: *parts* ovate, obtuſe, ſpreading.

STAM. *Filaments* five, very ſhort. *Anthers* heart-ſhaped, acute, converging into a cone, ſhorter than the corolla.

PIST. *Germ* ſuperior. *Style* filiform, longer than the corolla. *Stigma* ſimple, acute.

PER. *Berry* globoſe, crowned by the permanent ſtyle, one-celled.

SEED ſingle, globoſe, involved in a membrane.

ESSENTIAL CHARACTER.

*Cor.* wheel-ſhaped, deciduous. *Berry* containing one arilled ſeed.

SPECIES.

1. Bladhia japonica.

*Lin. ſyſt.* 236. *Thunb. jap.* 95. *t.* 18. *Kæmpf. amæn.* 5. 776. (Quackitz.)

*Leaves ſerrate ſmooth.*

2. Bladhia villoſa.

*Lin. ſyſt.* 237. *Thunb. jap.* 96. *t.* 19.

*Leaves ſerrate villoſe.*

3. Bladhia criſpa.

*Lin. ſyſt.* 237. *Thunb. jap.* 97. *Kæmpf. amæn.* 5. 776. 2. *tc. ſelect.* 1. 7.

*Leaves oblong curled ſmooth.*

DESCRIPTIONS, *&c.*

1. Root perennial, creeping with ſmall fibres. Stem ſhrubby, flexuoſe, erect, very thinly branched, from four inches to a foot high. Leaves frequent towards the top, oppoſite, petioled, ovate, acute, ſpreading, an inch long, the upper ones a little larger. Petiole linear, a line long. Flowers axillary, umbel-racemed, nodding. Peduncle ſtreaked, ſmooth, erect, two inches long. Pedicels round, red, ſmooth, nodding. Corolla white, ſweet-ſmelling.

2. Stem filiform, almoſt erect, tomentoſe, a finger's length. Leaves oppoſite, petioled, ovate, acute. Petioles half the length of the leaves. Flowers lateral, peduncled. Peduncles capillary, tomentoſe, with few flowers. It is much ſmaller than the foregoing, and entirely villoſe.

[c] Browne and Long's Jamaica.

[a] Linn. ſuppl.

3. Stem round, ſmooth, ſimple, upright, a ſpan or more in height. Leaves alternate, petioled, very oblong, very finely curled, paler underneath, nerved, upright, the upper ones longer, a ſpan in length. Flowers lateral, panicled. Berry red, the ſize of a pea [a].

Thunberg has another ſpecies among his obſcure plants [b], which has ſerrate, ſmooth, even leaves; oppoſite and aggregate on the top of the ſtalk, on ſhort petioles, ovate, acuminate, an inch and half in length. Stem ſhrubby, low, jointed, ſimple. Berry red, the ſize of a ſmall pea.

Theſe are all natives of Japan.]

[BLÆRIA. (*From Patrick Blair, M. D. He practiſed phyſic at Boſton in Lincolnſhire; and was author of Miſcellaneous Obſervations.* 1718. 8°.—*Botanick Eſſays.* 1720. 8°.—*Pharmacobotanologia, or a diſſertation on the Britiſh indigenous and garden plants of the new London Diſpenſatory, in 7 decads.* 1723, &c. 4°.—*Incomplete, extending no farther than the letter* H.—*Some papers in the Philoſophical Tranſactions.*)

*Lin. gen. n.* 139. *Reich.* 145. *Schreb.* 183. *Juſſ.* 160.

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Bicornes.—Ericæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-parted: *leaflets* linear, erect, a little ſhorter than the corolla, permanent.

COR. monopetalous, campanulate: *tube* cylindric, the length of the calyx, pervious: *border* ſmall, four-cleft; *diviſions* ovate, reflex.

STAM. *Filaments* four, ſetaceous, the length of the tube, inſerted into the receptacle. *Anthers* oblong, compreſſed, erect, obtuſe, emarginate.

PIST. *Germ* four-cornered, ſhort. *Style* ſetaceous, much longer than the corolla. *Stigma* obtuſe.

PER. *Capſule* obtuſe, quadrangular, four-celled, gaping at the angles.

SEEDS ſome roundiſh.

OBS. *The anthers indeed are emarginate, but by no means horned, as in* Erica, *which is allied to this. In* B. articulata *the corolla is cylindric; in* B. puſilla *it is funnel-form.* Reich.

ESSENTIAL CHARACTER.

*Cal.* four-parted. *Cor.* four-cleft. *Stam.* inſerted into the receptacle. *Capſ.* four-celled, many-ſeeded.

SPECIES.

1. Blæria ericoides. *Heath-leaved Blæria.*
*Lin. ſpec.* 162. *Reich.* 316. *mant.* 331. *hort. cliff.* 49. *Pet. gaz. t.* 2. *f.* 10.
*Anthers awnleſs ſtanding out; calyxes four-leaved; bractes the length of the calyx; leaves in fours oblong-acerоſe hairy imbricate.*

2. Blæria ciliaris. *Ciliated Blæria.*
*Lin. ſyſt.* 154. *ſuppl.* 122.
*Flowers in a head, calyxes ciliate.*

3. Blæria articulata. *Jointed-leaved Blæria.*
*Lin. ſyſt.* 154. *Reich.* 317. *mant.* 198.
Penæa Sarcocolla. *Berg. cap.* 25.
*Stamens protruded two-parted, corollas cylindric.*

4. Blæria purpurea. *Purple-flowered Blæria.*
*Lin. ſyſt.* 154. *ſuppl.* 122.
*Stamens included two-parted, corollas oblong ſtraight, flowers terminating aggregate, peduncles erect.*

5. Blæria puſilla. *Dwarf Blæria.*
*Lin. ſyſt.* 154. *Reich.* 317. *mant.* 331.
*Flowers ſcattered, corollas funnel-form.*

6. Blæria muſcoſa. *Moſs-leaved Blæria.*
*Ait. hort. kew.* 1. 150.
*Anthers awnleſs almoſt ſtanding out, calyxes one-leafed hairy, corollas bell-ſhaped hairy in the upper part, flowers axillary, ſtigmas peltate.*

DESCRIPTIONS, &c.

1. This has the ſtature of common Heath. Leaves in fours, ovate-oblong, gibbous, hairy-ſcabrous, preſſed to the ſtem, the length of the internodes. Flowers terminating, white with a tinge of purple. Corollas tubulous, erect. Anthers two-parted, ſcabrous. Style capillary, longer than the anthers [c].

Introduced here in 1774, by Mr. Fr. Maſſon [d].

2. This reſembles the foregoing; but the ſtamens are included, and it is readily known by its white calyxes, moſt diſtinctly ciliate [e].

3. This is a diſtorted ſhrub, the ſtature of common Heath. Leaves in fours, ovate, rugged, the length of the internodes, preſſed to the branches, whence they appear as if jointed. Heads of flowers terminating, with white-villoſe calyxes. Corollas fleſh-coloured. Anthers very narrow, black. It differs from the firſt, which has bell-ſhaped corollas, in having equal ſtamens, and leaves more imbricated. The fifth has ſmooth calyxes, and funnel-ſhaped corollas [f].

4. Is like the third; but in that the heads are nodding [g].

5. This has the ſtature of ſmall Heath. Branches pubeſcent. Leaves in fours, linear, rugged, petioled, ſcored underneath with a line. Flowers minute, ſcattered, ſhorter than the leaves. Cautiouſly to be diſtinguiſhed from the Heaths [h].

6. Found at the Cape of Good Hope by Mr. Francis Maſſon, and introduced in 1774. It flowers from june to auguſt [i].

PROPAGATION AND CULTURE.

Theſe are all ſhrubs, inhabitants of the Cape of Good Hope; require the ſame ſhelter and treatment with other Cape plants in the dry ſtove; and may be increaſed by cuttings, like the Ericas or Heaths, which they much reſemble.]

[BLAIRIA. See *Verbena.*

BLAKEA. (*So named by Dr. Patrick Browne, from Mr. Martin Blake of Antigua, a great promoter of uſeful knowledge, and a patron of the Dr.'s Natural Hiſtory of Jamaica.*)

*Lin. gen.* 593. *Reich.* 647. *Schreb.* 810. *Brown. t.* 35. *Juſſ.* 328.

Claſſ. 11. 1. Dodecandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth of the fruit* inferior, ſix-leaved; *leaflets* ovate, concave, expanding, the ſize of the flower.—*Perianth of the flower* ſuperior; margin quite entire, hexangular, membranaceous.

COR. *Petals* ſix, ovate, expanding, equal.

STAM. *Filaments* twelve, ſubulate, erect. *Anthers* triangular, depreſſed, concatenated into a ring.

PIST. *Germ* inferior, obovate, crowned with the margin of the calyx. *Style* ſubulate, the length of the flower. *Stigma* acute.

PER. *Capſule* obovate, ſix-celled.

SEEDS very many.

ESSENTIAL CHARACTER.

*Cal.* inferior ſix-leaved; ſuperior entire. *Pet.* ſix. *Capſ.* ſix-celled, many-ſeeded.

SPECIES.

1. Blakea trinervia.
*Lin. ſyſt.* 442. *Reich.* 2. 415. *ſuppl.* 246. *Brown. jam.* 323. *t.* 35. *Swartz obſ.* 188.
*Two-calyxed; leaves nerveleſs, very finely ſtriated acroſs.*

2. Blakea triplinervia.
*Lin. ſyſt.* 442. *Reich.* 2. 415. *ſuppl.* 246. *Aubl. guian.* 325. *t.* 210.
*Uncalycled: leaves triple-nerved.*

DESCRIPTIONS, &c.

1. Leaves oblong-ovate, petioled, quite entire, coriaceous, oppoſite; the three nerves underneath protuberant, blackiſh. Flowers oppoſite, ſolitary [k].

It grows generally to the height of ten or fourteen feet; but riſes always higher when it remains a climber, in which ſtate it continues ſometimes. It is certainly one of the moſt beautiful productions of America. It ſupports itſelf for a time by the help of ſome neighbouring ſhrub or tree, but it grows gradually more robuſt, and at length acquires a pretty moderate ſtem, which divides into a thouſand weakly declining branches, well ſupplied with

[a] Thunberg. [b] Japon. p. 350.
[a] Linn. mant. [b] Hort. kew. [c] Linn. ſuppl. [d] Linn. mant. [e] Linn. ſuppl. [f] Ibid. [g] Hort. kew. [h] Linn. ſuppl.

beautiful rosy blossoms, on all sides. Native of Jamaica, in cool moist shady places[1].

2. This tree grows to the height of sixteen feet. Leaves opposite, petioled, six or seven inches long, ribbed underneath and having a nerve running along the edge. Peduncles three-flowered. Flowers the size of the Pomgranate, distinct, without any lower perianth. Upper perianth three or five-cleft, coriaceous, permanent; the receptacle streaked from the centre to the circumference. Petals about seven, ovate-oblong, inserted into the calyx, sessile, yellow without, white within, fleshy. Filaments twelve or fifteen, subcylindric, inserted into the calyx: anthers ovate, compressed, parallel, bent, flattish at the back, shorter than the corolla, truncate as it were, not concatenated, a continuation of the filaments, and not fitting on them as is usual. Style club-shaped, round, the length of the petals, bent down to the lower side of the corolla, out of the circle of the stamens: stigma capitate, streaked. Fruit a roundish, many-celled berry, crowned with the calyx, the disk concave, the ring notched, the centre umbilicate. Seeds minute. The fruit is of a yellow colour, and sapid.

Native of Surinam, where it was observed by Dalberg[k]. Also of Guiana, where it flowers and fruits in may[l].

It has the habit of the genus, but the fruit is very different, as appears from the description.

PROPAGATION AND CULTURE.

These trees have not been yet cultivated in Europe. In the West-Indies the first species thrives best on the sides of ponds or rivulets; and when planted in gardens, where it makes a very elegant appearance, it ought to be supplied with some support whilst it continues young and weakly[m].

BLASIA. (*From Blasio Bingi, an Italian monk.*)
*Lin. gen. n.* 1199. *Mich. gen. t.* 7.
Cryptogamia Algæ.

1. Blasia pusilla.
*Lin. spec.* 1605. *Hudf. angl.* 519. *Dill. muſc. t.* 31. *f.* 7. *Fl. dan. t.* 45.
The dwarf Blasia grows on the sides of ditches and brooks, and in moist shady places in a sandy soil, in many parts of Europe. With us, on Hounslow-heath; near Manchester and Halifax.]

BLATTARIA. See *Celsia*, *Lythrum*, *Pentapetes*, *Verbascum*.

[BLATTARIÆ AFFINIS. See *Lysimachia*.

BLECHNUM.
*Lin. gen. n.* 1175. *Reich.* 1292. *Schreb.* 1627.
Cryptogamia Filices, or Ferns.

GENERIC CHARACTER.

*Fructifications* disposed in two lines approaching to the rib of the frond, and parallel.

SPECIES.

1. Blechnum occidentale. *South American Blechnum.*
*Lin. spec.* 1534. *Reich.* 4. 398. *Pet. fil. t.* 3. *f.* 9. *Mor.* 3. *f.* 14. *t.* 2. *f.* 16. *Raii suppl.* 66. *Plum. fil.* 62. *amer.* 20. *t.* 29. *f.* 9. *Sloan. jam.* 1. 87. *t.* 44. *f.* 2. *Brown. jam.* 91. 1.
*Fronds pinnate; pinnas lanceolate oppoſite emarginate at the base.*

2. Blechnum orientale. *Chineſe Blechnum.*
*Lin. spec.* 1535. *Reich.* 4. 398. *Forſt. fl. auſtral. n.* 422.
*Fronds pinnate; pinnas linear alternate.*

3. Blechnum australe. *Cape Blechnum.*
*Lin. ſyſt.* 932. *Reich.* 4. 398. *mant.* 130.
*Fronds pinnate; pinnas ſubſeſſile cordate-lanceolate quite entire, the lowest oppoſite.*

4. Blechnum virginicum. *Virginian Blechnum.*
*Lin. ſyſt.* 932. *Reich.* 4. 399. *mant.* 307.
*Fronds pinnate; pinnas multifid.*

5. Blechnum japonicum. *Japoneſe Blechnum.*
*Lin. ſyſt.* 932. *ſuppl.* 445. *Thunb. jap.* 333. *t.* 35.
*Frond bipinnatifid; pinnules ovate, obtuſe, ſerrated.*

6. Blechnum radicans. *Rooted-leaved Blechnum.*
*Lin. ſyſt.* 932. *Reich.* 4. 399. *mant.* 307. *Plak. alm.* 151. *t.* 179. *f.* 2.
*Fronds bipinnate; pinnas lanceolate crenulated; the lines of fructification interrupted.*

DESCRIPTIONS, &c.

1. This rises by a simple undivided stalk to the height of thirteen or eighteen inches. Leaves long and narrow[a]. Pinnas many, with two small auricles at the base[b]. Native of the West-India islands, and the continent of South America. Introduced here about 1777[c].

2. Frond three feet long. Stipe covered at the base before with large gray bristles; the anterior side of it scored longitudinally with three grooves. Leaflets linear-lanceolate, sessile, smooth, entire, streaked at an acute angle, the length of the finger[d]. Found in China by Osbeck: also in the Society isles.

3. Stipes a foot long, green. Fronds quite entire, rugged about the edge: the barren ones have broader pinnas, a little truncate at the base; the fertile fronds have lanceolate pinnas, heart-shaped at the base. There are only two lines of fructification, longitudinal, and distant both from the edge and rib[e].

Native of the Cape of Good Hope. Introduced here in 1774, by Mr. Francis Masson[f].

4. This has the stature of male Fern (Polypodium Filix mas). Frond smooth. Pinnas lanceolate, sessile, semipinnatifid, acute; divisions obtuse, quite entire[g].

Native of Virginia and Carolina. Cultivated in 1774, by John Fothergill, M. D.[h]

5. Stipe convex at the back and smooth; before flat and streaked; the whole smooth, flexuose, erect. Pinnas oblong, acute, pinnatifid; the lower subpetioled, the upper sessile. It differs from the *orientale*, in having an erect frond, and blunt pinnules. Native of Japan[i].

6. Frond rooting. Pinnas sessile, slightly concurrent at the base, serrate with a very fine callus, acuminate, more veined beneath. The line of fructification is next the nerve, but interrupted as it were by long points[k].

Native of Virginia, and Madeira, where it was observed by Koenig. Introduced in 1779, by Mr. Francis Masson[l].

PROPAGATION AND CULTURE.

These are Ferns from warm or hot countries; the fourth alone will abide the open air in England. The first must be kept in the bark-stove: the rest require only the protection of the dry stove or conservatory. They are increased by parting the roots.]

BLIGHTS.

There is nothing so destructive to a fruit garden as blights; nor is there any thing in the business of gardening which requires more of our serious attention, than the endeavouring to prevent or guard against this great enemy of gardens.

1. Blights are often caused by a continued dry easterly wind for several days together, without the intervention of showers, or any morning dew, by which the perspiration in the tender blossoms is stopped, so that in a short time their colour is changed, and they wither and decay; and if it so happen, that there is a long continuance of the same weather, it equally affects the tender leaves; for their perspiring matter is thereby thickened and rendered glutinous, closely adhering to the surface of the leaves, and becomes a proper nutriment to those small insects, which are always found preying upon the leaves and tender branches of fruit-trees, whenever this blight happens: but it is not these insects which are the first cause of blights, as hath been imagined by some; though it must be allowed, that whenever these insects meet with such a proper

[1] Browne. [k] Linn. suppl. [4] Aublet. [m] Browne.

[a] Browne. [b] Sloane. [c] Hort. kew. [d] Linn. [e] Ibid. [f] Hort. kew. [g] Ibid. [h] Ibid. [i] Thunberg. [k] Linn. [l] Hort. kew.



food,

food, they multiply exceedingly, and are inſtrumental in promoting the diſtemper; ſo that many times, when the ſeaſon proves favourable to them, and no proper care has been taken to prevent their miſchief, it is ſurpriſing to think how whole walls of trees have ſuffered by this infection.

The beſt remedy for this diſtemper, that I have yet known ſucceed, is, gently to waſh and ſprinkle over the trees, from time to time, with common water (that is, ſuch as has not had any thing ſteeped in it;) and the ſooner this is performed (whenever we apprehend danger,) the better; and if the young and tender ſhoots ſeem to be much infected, waſh them with a woollen cloth, ſo as to clear them, if poſſible, from all this glutinous matter, that their reſpiration and perſpiration may not be obſtructed: and if we place ſome broad flat pans or tubs of water near the trees, that the vapours exhaled from the water may be received by the trees, it will keep their tender parts in a ductile ſtate, and greatly help them: but whenever this operation of waſhing the trees is performed, it ſhould be early in the day, that the moiſture may be exhaled before the cold of the night comes on: eſpecially if the nights are froſty: nor ſhould it be done when the ſun ſhines very hot upon the wall, which would be ſubject to ſcorch up the tender bloſſoms.

2. Another cauſe of blights in the ſpring is, ſharp hoary froſts, which are often ſucceeded by hot ſunſhine in the day-time; this is the moſt ſudden and certain deſtroyer of fruits that is known; for the cold of the night ſtarves the tender parts of the bloſſoms, and the ſun riſing hot upon the walls before the moiſture is dried from the bloſſoms (which, being in ſmall globules, collects the rays of the ſun,) a ſcalding heat is thereby acquired, which ſcorches the tender flowers, and other parts of plants.

The method to prevent this miſchief is to cover the walls carefully with mats, canvas or reeds, faſtened ſo as not to be diſturbed with the wind, and ſuffered to remain on during the night, but taken off every day, when the weather permits. Although this method is thought by ſome to be of little ſervice; and may be really prejudicial, if the trees be too long covered, or incautiouſly expoſed; yet when this covering is conducted properly, it frequently proves a great protection to fruit-trees; and if the covering be fixed near the upper part of the wall, and be faſtened to pullies, ſo as to be drawn up or let down occaſionally, the operation will be eaſy, and the ſucceſs will ſufficiently repay the trouble.

3. But there is another ſort of blight that ſometimes happens later in the ſpring, namely in april or may, which is often very deſtructive to orchards, and open plantations, againſt which we know not any remedy. This is called a fire blaſt, which in a few hours has not only deſtroyed the fruit and leaves, but many times parts of trees, and ſometimes entire trees have been killed by it.

This is ſuppoſed to be effected by volumes of tranſparent flying vapours, which among the many forms they revolve into, may ſometimes approach ſo near to an hemiſphere or hemicylinder, either in their upper or lower ſurfaces, as thereby to make the beams of the ſun converge enough to ſcorch the plants or trees they fall upon, in proportion to the greater or leſs convergency of the ſun's rays.

Againſt this enemy to fruits, there is no guard to our trees, nor any remedy to cure it: but as this more frequently happens in cloſe plantations (where the ſtagnating vapours from the earth, and the plentiful perſpirations from the trees, are pent in for want of a free air to diſſipate and diſpel them; which are often obſerved, in ſtill weather, to aſcend in ſo plentiful a manner, as to be ſeen by the naked eye, but eſpecially with reflecting teleſcopes, ſo as to make a clear and diſtinct object become dim and tremulous,) than in thoſe that are planted at a greater diſtance, or are not ſurrounded with hills or woods; this directs us, in the firſt planting of kitchen-gardens and orchards, &c. that we ſhould allow a greater diſtance between the trees, and to make choice of clear healthy ſituations, that the air may freely paſs between the trees to diſſipate thoſe vapours before they are formed into ſuch volumes, whereby the circumambient air will be clear, and leſs ſubject to injuries; as alſo the fruits which are produced in this clearer air, will be much better taſted than thoſe that are ſurrounded with a thick rancid air; for as fruits are often in a reſpiring ſtate, they conſequently, by imbibing a part of theſe vapours, are rendered crude and ill-taſted, which is often the caſe with a great part of our fruits in England.

4. But that blights are frequently no more than an inward weakneſs or diſtemper in trees, will evidently appear, if we conſider how often it happens, that trees againſt the ſame wall, expoſed to the ſame aſpect, and equally enjoying the advantages of ſun and air, with every other circumſtance which might render them equally healthy, yet very often are obſerved to differ greatly in their ſtrength and vigour; and as often we obſerve the weak trees to be continually blighted, when the vigorous ones, in the ſame ſituation ſhall eſcape very well; which muſt, therefore, in a great meaſure, be aſcribed to their healthy conſtitution. This weakneſs, therefore in trees, muſt proceed either from a want of a ſufficient ſupply of nouriſhment to maintain them in perfect vigour, or from ſome ill qualities in the ſoil where they grow, or, perhaps, from ſome bad quality in the ſtock, or inbred diſtemper of the buds or cyons, which they had imbibed from their mother tree, or from miſmanagement in the pruning, &c. all which are productive of diſtempers in trees, until of which they are with difficulty cured. Now, if this is occaſioned by a weakneſs in the tree, we ſhould endeavour to trace out the true cauſe; firſt, whether it has been occaſioned by *ill* management in the pruning, which is too often the caſe: for how common is it to obſerve Peach-trees trained up to the full length of their branches every year, ſo as to be carried to the top of the wall in a few years after planting, when at the ſame time the ſhoots for bearing have been ſo weak, as ſcarcely to have ſtrength to produce their flowers: but this being the utmoſt of their vigour, the bloſſoms fall off, and, many times, the branches decay, either the greateſt part of their length, or quite down to the place where they were produced; and this, whenever it happens to be the caſe, is aſcribed to a blight.

Others there are, who ſuffer their trees to grow juſt as they are naturally diſpoſed, during the ſummer ſeaſon, without ſtopping ſhoots, or diſburdening their trees of luxuriant branches; by which means two, three, or four ſhoots ſhall exhauſt the greateſt part of the nouriſhment of the trees all the ſummer; which ſhoots, at the winter pruning, are entirely cut out; ſo that the ſtrength of the tree was employed only in nouriſhing uſeleſs branches, while the fruit branches are thereby rendered ſo weak, as not to be able to preſerve themſelves. The remedies to this evil has been explained in the article of PRUNING Peach-trees, &c. under AMYGDALUS.

But if the weakneſs of the tree proceeds from an inbred diſtemper, it is the better way to remove the tree at firſt: and after renewing your earth, plant a new one in its place.

Or if your ſoil be a hot burning gravel or ſand, in which your Peach-trees are planted, you will generally find this will be conſtantly their caſe, after their roots have got beyond the earth of your borders; for which reaſon, it is much more adviſeable to dig them up, and plant Grapes, Figs, Apricots, or any other ſort of fruit, which may do well in ſuch a ſoil, rather than to be annually diſappointed of your hopes; for, by a variety of experiments, it has been found, that Apricots attract and imbibe moiſture with a much greater force than Peaches and Nectarines; and conſequently, are better able to attract the nutritive particles from the earth, than the others, which require to be planted in a generous ſoil, capable of affording them a ſufficiency of nouriſhment

riſhment without much difficulty: and it is in ſuch places we often ſee Peaches do wonders; eſpecially if aſſiſted by art; but as for the Vine and Fig-tree, they perſpire very ſlowly, and are very often in an imbibing ſtate (ſo that a great part of that fine racy flavour, with which their fruits abound when planted in a dry ſoil, is probably owing to thoſe refined aërial principles, which are collected when in a ſtate of reſpiration;) and therefore, as theſe trees delight not in drawing much watery nouriſhment from the earth, ſo they will much better ſucceed in ſuch a ſoil, than in one that is more generous: we ſhould therefore always endeavour to ſuit the particular ſorts of fruits to the nature of our ſoil, and not pretend to have all ſorts of fruit good in the ſame.

BLITUM. (Βλίτον or Βλῖτος, *from* βλητὸν, *abjiciendum; fit only to be thrown away.*)

*Lin. gen. n.* 14. *Schreb.* 18. *Juſſ.* 86.—Chenopodio-Morus. *Boerh.* Morocarpus. *Rupp.*

Engl. *Blite.* Fr. *Blête.*

Claſſ. 1. 2. Monandria Digynia.

Nat. order of *Holoraceæ.—Atriplices* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* three-parted, ſpreading, permanent: *diviſions* ovate, equal, two more gaping than the other.

COR. none.

STAM. *Filament* ſetaceous, longer than the calyx, within the middle diviſion, erect. *Anther* twin.

PIST. *Germ* ovate, acuminate. *Styles* two, erect, gaping, the length of the ſtamen. *Stigmas* ſimple.

PER. *Capſule* very thin (rather the cruſt of the ſeed) ovate, a little compreſſed, contained within the calyx now become a berry.

SEED ſingle, globular, compreſſed, the ſize of the capſule.

ESSENTIAL CHARACTER.

*Cal.* trifid. *Pet.* none. *Seed* one, with a berried calyx.

SPECIES.

1. Blitum capitatum. *Berry-headed Strawberry Blite.*
*Lin. ſpec.* 6. *Reich.* 11. *hort. upſ.* 3. *vir. cliff.* 1. *hort. cliff.* 28. 2. *Hall. helv. n.* 1571.
Morocarpus capitatus. *Scop. carn. n.* 3.
Atriplex. *Bauh. pin.* 119. *n.* 7. *prodr.* 58. *n.* 2. *Ger. emac.* 326. *n.* 8. *Park.* 748. *f.* 1. *Mor. hiſt.* 2. 606. *f.* 5. *t.* 32. *f.* 11. *Raii hiſt.* 197. *n.* 5, 7.
*Heads ſpiked terminal.*
2. Blitum virgatum. *Slender-branched Strawberry Blite.*
*Lin. ſpec.* 7. *Reich.* 12. *hort. upſ.* 3. *cliff.* 495. *Gmel. ſib.* 3. 16. *Mill. illuſtr. fig.*
Atriplex. *Bauh. pin.* 119. *n.* 6. *Mor. t.* 32. *f.* 10. *Raii hiſt.* 197. *n.* 6.
*Heads ſcattered lateral.*
3. Blitum tataricum.
*Mill. dict. n.* 3.
B. fragiferum maximum polyſpermum. *Amm. ruth.*
*Leaves triangular ſharply toothed, heads ſimple lateral.*
[4. Blitum chenopodioides.
*Lin. ſyſt. Reich.* 12. *mant.* 170.
*Heads in whorls jointleſs.*]

DESCRIPTIONS, *&c.*

1. This is an annual plant, with leaves ſomewhat like thoſe of Spinach. The ſtalk riſes about two feet and a half high, in gardens. The leaves on the lower part of it are of the ſame ſhape with the root-leaves, only ſmaller. The upper part of it has flowers coming out in ſmall heads at every joint, and is terminated by a ſmall cluſter of the ſame. After the flowers are paſt, theſe little heads ſwell to the ſize of Wood Strawberries, and when ripe have the ſame appearance; being very ſucculent, and full of a purple juice, which ſtains the hands, [and was formerly much uſed in cookery, for colouring puddings, *&c.*

In the wild plant, the ſtem grows upright and only about a foot high. Leaves triangular, frequently cut half way into three lobes, with a few teeth, and ſtanding on long petioles. Heads of flowers ſeſſile, not only terminating, but along the whole upper part of the ſtem, from all the axils. Styles of the ſame colour with the calyx. Seed black when ripe[a].

It is commonly called Strawberry Blite, Strawberry Spinach, or Bloody Spinach; by ſome Berry-bearing Orach. Native of Switzerland, the Griſons, Auſtria, the Tyrol, Spain and Portugal. Cultivated by Parkinſon, in 1633.]

2. This ſeldom grows more than one foot high, with ſmaller leaves than the firſt, but of the ſame ſhape. The flowers are produced from the axils, almoſt the whole length of the ſtalk. They are ſmall, and collected into little heads, ſhaped like thoſe of the firſt, but ſmaller, and not ſo deeply coloured. Native of the South of France, Spain, Italy, and Tartary.

3. This riſes near three feet high: the leaves are triangular, ending in very acute points, as do alſo the indentures on the edges of the leaves. Flowers axillary in ſmall heads. Fruits of the ſame ſhape and colour as thoſe of the firſt, but ſmaller. This differs from that in the ſhape and indentures of the leaves; and in having leaves placed between the fruits the whole length of the ſtalk, which is not terminated by heads as the firſt, but has leaves above the heads.

The ſeeds were ſent to Mr. Miller by Dr. Ammann, profeſſor of Botany at Peterſburgh. [It is probably no more than a variety of the ſecond ſort.

4. This is a very low plant, much reſembling *Chenopodium*. Stem extremely ſimple, undivided, green. Leaves commonly oppoſite, lanceolate, ſubdeltoid, ſubpetioled, veinleſs, quite entire, having frequently an obſcure angle on each ſide. Whorls two or three, alſo terminating heads, conſtantly green, juiceleſs. Calyx three-leaved, concave, converging, green. Styles two. Seed roundiſh, compreſſed, purpliſh-brown. Native of Tartary; now in Sweden[b].

This is omitted in the Syſtema, and is probably only a variety. Indeed the four ſorts ſeem to be in reality but one.]

PROPAGATION AND CULTURE.

Theſe are all of them annual plants, which will drop their ſeeds if permitted, and the plants will come up in plenty the following ſpring: or if the ſeeds of either of the ſorts are ſown in march or april, upon a bed of common earth, in an open ſituation, the plants will come up in a month or five weeks after; and if they are to remain in the place where they are ſown, will require no other care but to keep them clear from weeds, and to thin them out, ſo as to leave them ſix or eight inches apart: and in july the plants will begin to ſhow their berries, when they will make a pretty appearance. But many people tranſplant them into the borders of the flower-garden, and others plant them in pots, to have them ready for removing to court-yards, or to place upon low walls, among other annual flowers, to adorn thoſe places.

When theſe plants are deſigned to be removed, they ſhould be tranſplanted before they ſhoot up their flower-ſtems, for they will not bear tranſplanting well afterward: and if they are planted in pots, they will require to be duly watered in dry weather, otherwiſe the plants will ſtint, and not grow to any ſize; and, as the flower-ſtems advance, they ſhould be ſupported by ſticks; for if they are not, the branches will fall to the ground, when the berries are grown pretty large and weighty.

[BLITUM. See *Achyranthes, Amaranthus, Chenopodium,* and *Gunnera.*

BLOOD-FLOWER. See *Hæmanthus.*

BLOODWORT or Bloody Dock. See *Rumex.*

BLUE-BOTTLE. See *Centaurea.*

BOBARTIA. See *Moræa* and *Rudbeckia.*

[a] Haller. [b] Linn. mant.

BOCCONIA. (*From Paolo Boccone, M. D. a Sicilian, and Ciſtercian monk under the name of Sylvius; author of Icones & deſcriptiones variorum plantarum Siciliæ, Melitæ, Galliæ & Italiæ; publiſhed by Moriſon at Oxford, 1674. 4°.——Muſeo di Piante rare. Ven.* 1697. 4°. &c.)

*Lin. gen. n.* 591. *Reich.* 643. *Schreb.* 803. *Juſſ.* 236. *Plum.* 25. *Jacqu. amer.* 146.

Claſſ. 11. 1. Dodecandria Monogynia.

Nat. order of *Rhoeadeæ. Papaveraceæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* two-leaved, ovate, obtuſe, concave, caducous.

COR. none.

STAM. *Filaments* twelve, (ſix *Willich.*) very ſhort. *Anthers* linear, very large, the length of the calyx.

PIST. *Germ* roundiſh, contracted both ways, large, pedicelled. *Style* one, bifid. *Stigmas* ſimple, reflex.

PER. ſubovate, attenuated to each end, compreſſed, one-celled, two-valved. *Valves* coriaceous, gaping from the baſe, the annular future continuing; crowned with the ſtyle.

SEED one, globular, the baſe involved in pulp, fixed to the bottom of the capſule.

OBS. *The capſule approaches in ſhape to a ſilicle, and in the permanent future terminated by the ſtyle.*

ESSENTIAL CHARACTER.

*Cal.* two-leaved. *Cor.* none. *Style* bifid. *Berry* dry, one-ſeeded.

SPECIES.

1. Bocconia frutescens. *Shrubby Bocconia, Tree Celandine*, or *Parrot-weed.*

*Lin. ſpec.* 634. *Reich.* 2. 412. *hort. cliff.* 202. *Jacqu. amer.* 146. *pict.* 72. *Willich obſ. n.* 35. *Swartz obſ.* 187. *Plum. gen.* 55. *Trew Ehret. t.* 4. *Brown. jam.* 244. *Sloan. jam.* 1, 196. *t.* 125. (Chelidonium.)

Cocoxihuitl. *Hern. mex.* 158.

DESCRIPTION, *&c.*

[This is a ſhrub riſing to the height of ten or twelve feet, with a ſtraight trunk, as large as a man's arm, covered with a white ſmooth bark, and branched towards the top[a]. The trunk is hollow, filled with a pith like the Elder, abounding in a thick yellow juice, like Argemone and Celandine. Branches brittle, unequal, marked with ſcars from the fallen leaves. Leaves from ſix or ſeven inches to a foot in length, oblong, ſinuate-laciniate, ſubferrate, ſmooth, aſh-coloured-tomentoſe beneath: petioles roundiſh, pubeſcent. Racemes terminating, panicled, a foot long, diffuſed, nodding. Peduncles one-flowered. Bractes under the flowers, ſmall, lanceolate. Filaments ten, ſeldom more, longer than the leaflets of the calyx, hanging down, looſe: anthers longer than the filaments. Germ ovate, compreſſed, glaucous[b]. Jacquin ſays, that he has always reckoned from twelve to ſixteen ſtamens in the flower when cloſed.

Native of Mexico and the Weſt-India iſlands.

The juice is acrid, and is uſed in the Weſt-Indies to take off tetters and warts[c].

It was cultivated in 1739. by Mr. Miller[d].]

PROPAGATION AND CULTURE.

It is propagated by ſeeds, which ſhould be ſown in a pot filled with light freſh earth, early in the ſpring, and plunged into a hot-bed of tanners-bark, obſerving to water it now and then gently, otherwiſe the ſeeds will not grow. When the plants are come up, they ſhould be each tranſplanted into ſeparate ſmall pots filled with light ſandy earth, and plunged into the hot-bed again, obſerving to ſhade the glaſſes in the heat of the day, until the plants have taken root. They muſt be alſo gently watered, but it ſhould be done ſparingly while they are young; for their ſtems being very tender, and full of juice, will rot, if they receive too much moiſture; but after their ſtems are become woody, they will require it often, eſpecially in hot weather; when alſo they ſhould have a large ſhare of air; by raiſing the glaſſes of the hot-bed. The plants, in two months after tranſplanting, will have filled theſe ſmall pots with their roots; therefore they ſhould be ſhaken out of them, and planted into pots one ſize larger filled with light freſh earth, and plunged into the bark-ſtove, where they ſhould have a good ſhare of freſh air in warm weather. With this management I have raiſed theſe plants upwards of two feet high in one ſeaſon, which were alſo very ſtrong in their ſtems: they muſt be conſtantly kept in the ſtove, being too tender to thrive in this country in any other ſituation. This plant has flowered in the phyſic garden at Chelſea, and perfected ſeeds; but if it were not to flower, the ſingular beauty of the plant renders it worthy of a place in every curious collection of plants; and it ſeems the Indians were very fond of it, for Hernandez tells us, the Indian kings planted it in their gardens.—Cultivated 1739. by Mr. Miller.

BOEHMERIA. (*So named by Jacquin, in honour of George Rudolph Boehmer, profeſſor of anatomy and botany in the univerſity of Wittenberg.*)

*Lin. gen. Schreb. n.* 1421. *Jacqu. amer.* 246. *Swartz. prodr.* 34. *Auct. D. D. Swartzio. Juſſ.* 403.

Claſſ. 21. 4. Monoecia Tetrandria.

Nat. order of *Scabridæ.—Urticæ* Juſſ.

GENERIC CHARACTER.

* *Male flowers* in the ſame plant with the females, either diſtinct or mixed.

CAL. *Perianth* one-leafed, four-parted to the baſe: * *parts* lanceolate, acute, ſomewhat erect, coloured.

COR. none.

*Nectary none.*

STAM. *Filaments* four, longer than the calyx, ſubulate, upright. *Anthers* roundiſh, ovate.

PIST. a rudiment, or none.

* *Female Flowers.*

CAL. none, but numerous crowded ovate-acuminate *ſcales.*

COR. none.

PIST. *Germ* ovate, between each ſcale, compreſſed. *Style* filiform, erect, permanent. *Stigma* ſimple, pubeſcent.

PER. none.

SEED roundiſh, compreſſed, margined.

OBS. *This genus is as it were intermediate between Urtica and Parietaria.* Sw. *

ESSENTIAL CHARACTER.

MALE. *Cal.* four-parted. *Cor.* none.

FEM. *Cal.* none, but crowded ſcales: between each, *germ* obovate; *ſtyle* ſingle; *ſeed* ſingle compreſſed.

SPECIES.

1. Boehmeria caudata.

*Swartz prodr.* 34. *Brown. jam.* 338. *n.* 11. (Urtica.)

*Leaves oppoſite ovate acute ſerrate, racemes very long pendulous, flowers dioecious, ſtem ſuffruticoſe.*

2. Boehmeria littoralis.

*Swartz prodr.* 34.

*Leaves oppoſite ovate-lanceolate ſerrate, flowers conglomerate axillary monoecous mixed, ſtem herbaceous four-cornered.*]

3. Boehmeria cylindrica.

*Swartz prodr.* 34.

Urtica cylindrica. *Lin. ſpec.* 1396. *Reich.* 4. 131. *Mill. dict. n.* 6. *Gron. virg.* 187. 145. *Sloan. jam.* 1. 124. *t.* 82. *f.* 2. *Raii hiſt.* 3. 106.

*Leaves oppoſite ovate acuminate ſerrate, racemes ſpiked axillary erect ſimple.*

[4. Boehmeria ramiflora.

*Swartz prodr.* 34. *Jacqu. amer.* 246. *t.* 157.

Caturus ramiflora. *Linn. mant.* 127. *ſyſt. Reich.* 4. 329. *Brown. jam.* 337. *n.* 10. (Urtica.)

*Leaves alternate broad-lanceolate acuminate ſerrate wrinkled, flowers aggregate axillary and lateral monoecous diſtinct, males three-ſtamened.*

5. Boehmeria hirta.

*Swartz prodr.* 34.

*Leaves alternate ovate acute ſerrate birſute, flowers monoecous beaped axillary mixed.*

DESCRIPTIONS, *&c.*

1. This is a ſhrub growing to the height of ten or twelve feet. The leaves are very broad. It is frequent

[a] Sloane. [b] Swartz. [c] Sloane. [d] Hort. kew.

frequent in the cooler mountains of Liguanea, in Jamaica [a]. Browne calls it the Nettle Tree.

2. Native of Hiſpaniola [b].]

3. This is an annual plant, with a lucid herbaceous ſtalk, dividing into ſeveral branches. The leaves have three longitudinal veins, and are placed on pretty long foot-ſtalks. Flowers in ſingle catkins, which are not divided.

[Linneus obſerves, that the ſtipules are ſubulate and caducous.

Native of North America and Jamaica.

4. This is a ſhrub eight feet in height, with long branches. Leaves ſickle-ſhaped, rugged, on very ſhort petioles, hanging forward, placed alternately towards the ends of the twigs, very different in ſize, being two inches and a foot in length on the ſame twig. Male flowers ſmall; yelloviſh, numerous, aggregate, on the leafleſs old branches. Females whitiſh on the younger twigs to the very ends [c].

Native of Jamaica, Martinico, and other iſlands of the Weſt-Indies.

5. Native of Jamaica [d].

BOERHAVIA. *(So named by Monſ. Vaillant, in honour of the famous Boerhaave, profeſſor of botany, chemiſtry and medicine, in the univerſity of Leyden.)*

*Lin. gen. n.* 9. *Schreb.* 13. *Vaill. ſerm. Juſſ.* 91.

Antaniſophyllum. *Vaill. act. gall.* 1722.

Claſſ. 1. 1. Monandria Monogynia.

Nat. order of *Aggregatæ*, *Nyctagenes* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* oblong, tubular and angular, placed beneath the corolla, with a contracted entire mouth, permanent.

COR. one-petalled, bell-ſhaped, upright, bluntly five-cleft, plaited, ſeated on the calyx.

*Nectary* fleſhy, ſubcylindric, with a toothletted mouth, ſurrounding the baſe of the germ.

STAM. *Filaments* one, two, or three, inſerted into the edge of the nectary, between the toothlets, capillary, at bottom (within the calyx) more ſlender, upright, about the length of the corolla. *Anthers* twin, globular.

PIST. *Germ* roundiſh, pedicelled: the pedicel ſurrounded by the nectary. *Style* filiform, twiſted, the height of the ſtamens. *Stigma* capitate.

PER. none. Calyx enlarged, cloſed, incruſts the ſeed.

SEED one, oblong, obtuſe, angular.

OBS. *It is nearly related to* Mirabilis. *The toothlets of the nectary are ſometimes triangular and very ſmall; ſometimes obſolete.*

ESSENTIAL CHARACTER.

*Cal.* none. *Cor.* one-petalled, bell-ſhaped, plaited. *Seed* one, naked, inferior. (Stam. one, two, or three.)

SPECIES.

1. Boerhavia erecta. *Upright Hogweed.*
*Lin. ſpec.* 4. *Syſt.* 52. *Reich.* 6. *mant.* 315. *Gouan. hort.* 2. *Jacqu. hort.* 1. *t.* 5, 6. *Amm. herb.* 241. *Forſt. eſcul.* 41. *ſtorul. n.* 4.
B. diandra. *Burm. ind.* 3. *t.* 1. *f.* 2.
B. ſolanifolia erecta glabra, flor. carneis laxius diſpoſitis. *Houſt. M. S. S. Mill. dict. n.* 1.
*Stem erect ſmooth, flowers two-ſtamened.*

2. Boerhavia diffuſa. *Spreading Hogweed.*
*Lin. ſpec.* 4. *Syſt.* 52. *Reich.* 6. *ſt. acyl.* 10. *hort. upſ.* 2. *cliff.* 17.
Valerianella. *Sloan. cat. jam.* 91. *Raii ſuppl.* 244. *Herm. par. t.* 237.
Talu-dama. *Rheed. mal.* 7. 105. *t.* 56.
*Stem ſmooth and even, diffuſed; leaves ovate.*

3. Boerhavia hirſuta.
*Lin. ſyſt.* 52. *Reich.* 7. *mant.* 179. *Jacqu. hort. t.* 7.
B. diandra. *Lin. ſpec.* 4.
B. coccinea. *Mill. dict. n.* 4.——fol. procumbens & hirſuta, flor. coccineis compactis. *Houſt. M. S. S. id.*
*Stem diffuſed pubeſcent, leaves ovate repand.*

4. Boerhavia ſcandens. *Climbing Hogweed.*
*Lin. ſyſt.* 52. *ſpec.* 4. *Reich.* 7. *mant.* 315. *Gouan. hort.* 2. *Jacqu. hort.* 1. *t.* 4. *Forſk. ægypt.* 3. *n.* 5. *Brown. jam.* 123.
Solanum bacciferum, &c. *Pluk. alm.* 349. *t.* 226. *f.* 7.
Valerianella. *Sloan. jam.* 1. 210. *Raii ſuppl.* 244. *Pluk. alm.* 381. *t.* 113. *f.* 7.
Antaniſophyllum ſcandens, alſines majoris folio. *Vaill. act.* 1722. *p.* 190.
B. alſines fol. ſcandens, flor. pallide luteis majoribus in umbellæ modum diſpoſitis, ſemine aſpero. *Houſt. M. S. S. Mill. dict. n.* 3.
*Stem erect, flowers two-ſtamened, leaves cordate acute.*

[5. Boerhavia repens.
*Lin. ſpec.* 5. *Reich.* 8. *Vaill. ſex.* 53.
β. *Vaill. ſex.* 55.
*Stem creeping.*

6. Boerhavia anguſtifolia.
*Lin. ſyſt.* 52. *Reich.* 8.
*Leaves linear, acute.*

7. Boerhavia tetrandra.
*Forſt. ſtorul. n.* 5. *ſig. M. S. t.* 2.
*Stem creeping; flowers four-ſtamened.*]

DESCRIPTIONS, &c.

1. Stem two feet high. At each joint a pair of ovate pointed leaves, whitiſh underneath, on foot-ſtalks an inch in length. At theſe joints, which are far aſunder, come out alſo ſmall ſide branches, growing erect; they, as well as the ſtem, are terminated by looſe panicles of fleſh-coloured flowers, ſucceeded by oblong glutinous ſeeds.

[Stem with ſcattered atoms or very ſhort hairs. Leaves waved, rugged about the edge. Corollas cylindric, white; ſegments acute, with toothlets interpoſed. Stamens two, (Fabricius ſays three) *.]

This was diſcovered by Dr. Houſtoun, at La Vera Cruz, in 1731. [Alſo in the Society iſles.]

2. This ſends out many diffuſed ſtalks, a foot and half or two feet long; with ſmall roundiſh leaves at each joint. The flowers grow very ſcatteringly, upon long branching peduncles from the axils and at the ends of the branches; they are of a pale red colour, and are ſucceeded by ſeeds like thoſe of the foregoing ſort. [Linneus adds, that the leaves are whitiſh underneath; that the flowers are purple, have one ſtamen only, and a twin anther. Native of both Indies. Mr. Miller received the ſeeds from Jamaica by Dr. Houſtoun: but it had been cultivated in the royal garden at Hampton Court in 1690 *.]

3. This ſends out many trailing hairy ſtalks, which divide into ſmaller branches. At the axils come out naked peduncles, ſuſtaining ſmall cloſe heads of ſcarlet flowers, which are very fugacious, ſeldom ſtanding more than half a day before their petals drop: they are ſucceeded by ſhort oblong ſeeds.

[According to Linneus, the ſtems are a foot high; and the flowers blood-red, with two ſtamens. It is diſtinct however from the firſt ſort. Jacquin affirms, that he has always found one ſtamen only.]

This alſo was ſent to Mr. Miller by Dr. Houſtoun, from Jamaica, where it grows naturally.

4. This ſends out ſeveral ſtalks from the root, which divide into many branches, and trail over whatever plants grow near them, riſing to the height of five or ſix feet. Leaves by pairs at each joint, on long foot-ſtalks; of the colour and conſiſtence of thoſe of the greater Chickweed. The flowers grow in looſe umbels at the extremities of the branches; they are yellow, and are ſucceeded by ſmall, oblong, viſcous ſeeds. [The ſtem is very ſtiff and ſmooth, with alternate branches: the leaves are ſmooth: the umbels ſix-flowered and green: the involucres five-leaved [e]. Native of Jamaica, eſpecially about Spaniſh Town. Cultivated in 1691, in the royal garden at Hampton Court [f].

5. Native of Nubia, between Mocho and Tangos [g].

[a] Browne. [b] Swartz. [c] Jacquin. [d] Swartz.
[a] Linn. mant. [b] Hort. kew. [c] Linn. [d] Hort. kew. [e] Linn. ſpec.

6. The native place not known.
7. Native of the Society isles[r]. Found in the island of Huaheine, may 18th, 1774[s].]

PROPAGATION AND CULTURE.

The first, second, and third sorts are annual plants, which decay in autumn, but the fourth sort is perennial: they are all tender plants, and will not thrive in the open air in England; they are propagated by seeds, which must be sown on a hot-bed in the spring, and when the plants are fit to be removed, they should be each planted in a small pot and plunged into the hot-bed, and treated as other tender exotic plants. When they are grown too tall to remain under a common frame, a plant or two of each sort should be placed in the stove; the others may be turned out of the pots, and planted in a warm border, where, if the season proves warm, they will perfect their seeds; these however are subject to fail in cold seasons, but those in the stove will always ripen their seeds in autumn; the fourth sort may be preserved in a warm stove two or three years.

BOG-RUSH. See *Schoenus.*

BOHADSCHIA. See *Peltaria.*

[BOLETUS. (Βωλιτης, Gr. *From its globular form.*)

Characterized by Linneus as a horizontal Fungus, porous or punched with lobes underneath.

In the Systema Naturæ (edit. 14.) only twenty-one species are recited; eleven of which are parasitical and stemless; the rest are stipitated. Mr. Hudson has thirteen species, five of which are not in Linneus, but chiefly from Schæffer, who has a vast many other species not noticed by Linneus.

British species are figured by Bolton from t. 74 to 87. and in the Appendix, t. 138. and t. 159 to 170.

From B. igniarius, is prepared the *Amadou*, commonly used on the continent for tinder, to receive the spark struck from the steel by the flint; and the Agaric for stopping hæmorrhages in amputations, &c. For the manner of preparing it, see Bomare dict. art. *Agarit de Chene.*]

[BOLTONIA. (*So named in honour of Mr. James Bolton of Halifax, author of the history of British Ferns, and of Funguses growing about Halifax.*)

*Lin. gen. Schreb. n.* 1309. *L'Herit. sert. p.* 27.
Class. 19. 2. Syngenesia Polygamia Superflua.
Nat. order of *Compositæ Oppositifoliæ.*

GENERIC CHARACTER.

CAL. *Common* flattish, imbricate with somewhat equal, linear, sharp *scales.*
COR. *Compound*, radiate; *corollets* hermaphrodite, tubular, numerous, in the hemispheric disk. *Females* several in the ray.
*Proper* of the hermaphrodite funnel-form, five-cleft. *Female* linear, entire.
STAM. *Filaments* five, capillary, very short. *Anthers* cylindric, tubular.
PIST. in the hermaphrodites: *Germ* oblong. *Style* filiform; *stigmas* two.
In the females: *Germ* oblong. *Style* filiform, length nearly of the hermaphrodite. *Stigmas* two, revolute.
PER. none. *Calyx* unchanged.
SEED, in the hermaphrodites solitary, compressed, crowned with a five-toothed margin, (two-horned. *L'Herit.*) in the *females* extremely similar.
REC. naked, hemispheric.

ESSENTIAL CHARACTER.

*Cal.* common subimbricate, with linear scales. *Cor.* radiate. *Germs* compressed, vertical. *Down* obscurely toothed, two-horned. *Recept.* honey-combed.

SPECIES.

1. Boltonia asteroides. *Starwort-flowered Boltonia. L'Herit. sert. angl. t.* 36.
Matricaria asteroides. *Lin. mant.* 116.
*Leaves quite entire.*

2. Boltonia glastifolia. *Glaucous-leaved Boltonia. L'Herit. sert. angl. t.* 35.
*Lower leaves serrate.*

DESCRIPTIONS, &c.

1. The plant is that of an Aster with the leaves of *Lactuca Scariola.* Stem upright, two feet high, stiff, even, scarcely angular, slightly streaked. Leaves alternate, remote, sessile, lanceolate, even, bent down at the base, rugged about the edge, vertical in the disk. Panicle thin, stiffish, with one-flowered peduncles. Disk of the corolla hemispherical, yellow: ray linear, entire, pale flesh-colour[t].

2. Both these are natives of America, flower late in the autumn, and were cultivated by Mr. Miller in 1758[u].]

BOMBAX.

Engl. *Silk-Cotton.* Fr. *Fromager.*
*Lin. gen. n.* 835. *Reich.* 901. *Schreb.* 1127. *Jacqu. amer.* 191. *Juss.* 275. Xylon. *Lin. gen. edit. prior.* Ceiba. *Plum.* 32.
Class. 16. 5. Monadelphia Polyandria.
Nat. order of *Columniferæ.—Malvaceæ* Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular-campanulate, permanent: *mouth* three or five-cleft, obtuse, erect.
COR. five-parted, spreading; segments oblong, concave.
STAM. *Filaments* five or many, subulate, the length of the corolla, connate at the base. *Anthers* oblong, bent in, incumbent.
PIST. *Germ* roundish. *Style* filiform, the length of the stamens. *Stigma* capitate, five-toothed.
PER. *Capsule* large, turbinate-oblong, five-celled, five-valved; valves woody.
SEEDS very many, round, woolly. *Recept.* columnar, five-cornered, forming the partitions.
OBS. B. pentandrum *has a pentapetalous corolla, and five stamens.* Ceiba & heptaphyllum *have a funnel-form monopetalous five-cleft corolla and many stamens.*

ESSENTIAL CHARACTER.

*Cal.* five-cleft. *Stam.* five or more. *Capf.* woody, five-celled, five-valved. *Seeds* woolly. *Recept.* five-cornered.

SPECIES.

1. Bombax pentandrum.
*Lin. spec.* 959. *fyst.* 620. *Reich.* 3. 332. *hort. upf.* 148. *Jacqu. amer.* 191. *t.* 176. *f.* 70. *pict.* 94. *t.* 182. *Browne. jam.* 277.
Xylon caule inermi. *Lin. hort. cliff.* 175. *fl. zeyl. n.* 220.
Gossipium. *Bauh. pin.* 430. *n.* 4. *Raii hist.* 1899. *n.* 6. *Herm. lugdb.* 294.
Lanifera arbor peregrina. *Bauh. hist.* 1. 347.
Eriophoros javana. *Rumph. amb.* 1. 194. *t.* 80.
Panja. *Rheed. mal.* 3. 59. *t.* 49, 50, 51.
*Flowers five-stamened; leaves in sevens.*
2. Bombax Ceiba.
*Lin. spec.* 959. *fyst.* 621. *Reich.* 3. 333. *Jacqu. amer.* 192. *t.* 176. *f.* 71. *pict.* 94. *t.* 261. *f.* 54.
X. caule aculeato. *Lin. hort. cliff.* 75. *upf.* 148. *fl. zeyl. n.* 221.
Ceiba viticis fol. caudice aculeato. *Plum. gen.* 42.
Gossipium. *Bauh. pin.* 430. *n.* 3. *Sloan. jam.* 2. 72.
*Flowers many-stamened; leaves quinate.*
[3. Bombax heptaphyllum.
*Lin. spec.* 960. *fyst.* 621. *Reich.* 3. 333. *Jacqu. amer.* 193. 3. *pict.* 95. *t.* 261. *f.* 55.
Goss. f. Xylon, &c. *Pluk. alm.* 172. *t.* 188. *f.* 4.
Moul-clavou. *Rheed. mal.* 3. 61. *t.* 52. *Raii hist.* 1899.
*Flowers many-stamened; leaves sevenfold.*]
4. Bombax gossypinum.
*Lin. fyst.* 621. *Reich.* 3. 333. *fl. zeyl. n.* 222. (Xylon.) *Mill. dict. n.* 3?
Ketmia. *Burm. zeyl.* 136. 1.
B. Conga. *Burm. ind.* 145.
Gossipium. *Pluk. alm.* 172. *t.* 188. *f.* 2?
*Leaves five-lobed acuminate tomentose beneath.*

[r] Forster. [s] Id. 6g. M. S.
[t] Lien. mant. [u] Hort. kew.

DESCRIPTIONS, &c.

1. This has ſmooth ſtems, which in the young plants are of a bright green, but after a few years they are covered with a gray or aſh-coloured bark, which turns to a brown as the trees grow older: they ſeldom put out any ſide branches till they arrive at a conſiderable height, unleſs their leading ſhoot be broken or injured. The branches towards their top have leaves compoſed of five, ſeven or nine ſmooth, lanceolate leaflets, joined to one centre at their baſe, where they adhere to the long footſtalk. Theſe fall away every year, ſo that for ſome time the trees are naked; and before the new leaves come out, the flower-buds appear at the ends of the branches, and ſoon after the flowers expand: they are compoſed of five oblong purple petals, with a great number of ſtamens in the centre; when theſe fall off, they are ſucceeded by oval fruit larger than a ſwan's egg, having a thick, woody cover, which, when ripe, opens in five parts, and is full of a ſhort dark cotton, incloſing many roundiſh ſeeds as large as ſmall peas.

[Linneus affirms, that the ſtem when young is prickly, but not ſo when it is grown up; that the leaves are ſometimes quite entire, ſometimes ſerrate; and that the flowers are very numerous.

It was cultivated in 1739, by Mr. Miller*.]

2. The trunk of the ſecond ſort is cloſely armed with ſhort, ſtrong ſpines. This has been ſuppoſed, by many writers, to be the ſame with the firſt ſort; but from many year's experience I can affirm, that the ſeeds which have been ſent me of the two ſorts have always produced different plants, and have continued the ſame at more than twenty years growth.

They arrive at a great ſize in both Indies, being one of the talleſt trees in thoſe countries; but the wood is very light, and not much valued, except for canoes.* Their trunks are ſo large, as when hollowed, to make very large ones. In Columbus's firſt voyage it was related, that a canoe was ſeen at the iſland of Cuba, made of one of theſe trees, which was ninety-five palms long, of a proportional width, and capable of containing one hundred and fifty men; and ſome modern writers have affirmed, that there are trees of the Silk-Cotton now growing in the Weſt-Indies, ſo large as not to be fathomed by ſixteen men, and ſo tall that an arrow cannot be ſhot to their top.

[The canoes now made in the Weſt-Indies from this tree frequently carry from fifteen to twenty hogſheads of ſugar, from ſix to twelve hundred weight each; the average about twenty-five tons burthen. When ſawn into boards, and then well ſaturated with lime-water, the wood bears expoſure to the weather many years; it is alſo formed into laths for roofs, curing-pots and hogſhead heading.

When the tree decays, it becomes a neſt for the Macaca beetle, the caterpillar of which, gutted and fried, is eſteemed by many perſons one of the greateſt delicacies*.]

The down which is incloſed in the ſeed-veſſels is ſeldom uſed, except by the poorer inhabitants to ſtuff pillows or chairs; and it is generally thought unwholſome to lie upon.

[The ſecond ſort was cultivated in 1692, in the royal garden at Hampton Court*.

3. This grows fifty feet high before it branches, and is eighteen feet in thickneſs. The bark has ſmooth, ſhining, ſharp prickles, which fall off on the body, but remain on the branches, ſo as to prevent monkies from climbing the tree. It grows every where in Malabar, bearing fruit at ſixteen years growth, in february and march, till it is two years of age and upwards*. It is alſo a native of America.

Linneus, in his earlier works, made Rheede's plant a ſynonym of his ſecond ſpecies, but afterwards referred it to this, although he affirms the trunk to be unarmed; whereas it is ſaid by Rheede to be armed.

4. This reſembles *Goſſipium religioſum* ſo much, that Plukenet's figure may ſerve for both; it differs however, in the leaves being tomentoſe underneath, and the ſtamens diſtinct. The leaves are large and heart-ſhaped, with ovate lobes, that are quite entire, the hinder ones ſmalleſt. The corolla is very large, with emarginate petals. Stamens many, diſtinct, much ſhorter than the corolla, with oblong, upright anthers. Style filiform*. Native of the Eaſt Indies.

Whether the third ſpecies of Miller (Bombax villoſum) be the ſame with this I am uncertain. He ſays, that it] was ſent him from the Spaniſh Weſt-Indies; and that the plants which have been raiſed here, have ſoft herbaceous ſtalks very full of joints, and do not appear as if they would become woody, for the plants of ſeveral years growth have ſoft pithy ſtems. The leaves come out on long hairy foot-ſtalks, towards the top of the plants; they have the appearance of thoſe of the Mallow-tree, but are larger, and of a thicker conſiſtence, are covered on their under ſide with a ſhort, brown, hairy down, and are cut on their edges into five angles. Theſe plants have not as yet flowered in England, but by the pods and ſeeds they appear evidently to be of this genus. The down incloſed in the pods is of a fine purple colour, and the inhabitants ſpin it, and work it into garments, which they wear without dyeing.

Mr. Miller alſo ſays, that he received a few pods of another ſort from Panama, which were not ſo large as thoſe of the common ſort, but were rounder. The down or cotton of theſe was red, but the plants raiſed from the ſeeds were ſo like the foregoing as not to be diſtinguiſhed from them. He alſo received ſeeds from Siam, which produced plants of the ſame ſort; ſo that theſe trees are probably common to many of the hot countries.

A fine plant of another ſort was alſo raiſed many years ſince, in the garden of the late Duke of Richmond at Goodwood, from ſeeds that came from the Eaſt-Indies. The ſtem of this was very ſtraight and ſmooth; the leaves were produced round the top upon very long foot-ſtalks, each being compoſed of ſeven or nine long, narrow, ſilky, ſmall leaflets, joined at their baſe to the foot-ſtalk, in the ſame manner as the other ſorts; but they were much longer, and reflex.

PROPAGATION AND CULTURE.

Silk-cotton is propagated by ſeeds, which muſt be ſown on a hot-bed in the ſpring; if the ſeeds are good, the plants will appear in a month, and will be ſtrong enough to tranſplant in a month after, when they ſhould be each planted in a ſmall pot, filled with freſh loamy earth, and plunged into a moderate hot-bed of tanners bark, being careful to ſhade them from the ſun till they have taken freſh root; after which they ſhould have a large ſhare of air admitted to them when the weather is warm, to prevent their being drawn up weak; they muſt alſo be frequently refreſhed with water, which muſt not be given in large quantities. In this bed they may remain till autumn (provided there be room for the plants under the glaſſes) but if the heat of the bed decline, the tan ſhould be ſtirred up, and freſh added to it; and if the plants have filled the pots with their roots, they ſhould be ſhifted into pots a little larger; but there muſt be care taken not to over-pot them, for nothing is more injurious to theſe plants, than to be put into large pots, in which they will never thrive. In the autumn they muſt be removed into the bark-ſtove, where they muſt conſtantly remain, being too tender to thrive in this country in any other ſituation. In winter they muſt have but little wet, eſpecially if they caſt their leaves; but in the ſummer they ſhould be frequently refreſhed with water, and in warm weather muſt have plenty of freſh air admitted to them,

* Hort. kew. * Long's Jamaica. * Hort. kew.
* Hort. malab.

* Linnæus.

With this management the plants will make great progrefs, and in a few years will reach the glaſſes on the top of the ſtove.

The plants make an agreeable variety in a large ſtove where they have room to grow, their leaves having a different appearance from moſt other plants; but as they are ſeveral years old before they flower in the countries where they grow naturally, there is little hopes of their producing any in England.

[BON. See *Coffea*.

BONA. See *Vicia Faba*.

BONA NOX. See *Smilax*.

BONAROTA. See *Pædcrota*.]

BONDUC. See *Guilandina*.

[BONDUCELLA. See *Guilandina*.

BONNETIA. (*So named in honour of Monſ. Charles Bonnet of Geneva.*)

*Lin. gen. Schreb. n.* 915. Mahuria. *Aubl.* 222. *Juſſ.* 434.

Claſſ. 13. 1. Polyandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted; *parts* concave acute: two larger.

COR. *Petals* five, ovate, ſomewhat obtuſe, concave, longer than the calyx, of which the three ſmaller are upright: the two larger declinate, gaping.

STAM. *Filaments* very many, (170) inſerted into the receptacle, ſhorter than the corolla, dilated at the tip. *Anthers* oblong tetragonal.

PIST. *Germ* oblong, ſuperior. *Style* length of the germ, incurved. *Stigma* three-lobed.

PER. *Capſule* oblong, three-celled, three-valved: *valves* ſharp-pointed.

SEEDS very many, very ſmall, oblong, involved in a coloured membrane, affixed to the three-ſided *receptacle*.

ESSENTIAL CHARACTER.

*Cal.* five-parted, two parts larger. *Cor.* five-petalled, three ſmaller upright, two larger declinate. *Capſ.* oblong, three-celled, three-valved, many-ſeeded.

SPECIES.

1. Bonnetia Mahuria.
*Aubl. guian.* 222.

DESCRIPTION, *&c.*

Bonnetia, of which at preſent only one ſpecies is known, grows in marſhy places in Cayenne and Guiana. It is a tree about fifteen feet high, branching chiefly towards the top: the branches are upright in their growth. The leaves are alternate, ſmooth, ovate, and entire. The flowers are borne on terminal ſpikes, and are of a purple colour.

In its native climate it flowers in auguſt, and ripens its ſeeds in october.]

BONTIA. (*So named from Jacobus Bontius, a phyſician at Batavia. He publiſhed, de Medicina Indorum*, 1642. 12°. 1646. 4°. *and printed with Piſo*, 1658. *fol. alſo in Engliſh*, 1679. 8°.)

*Lin. gen. n.* 791. *Reich.* 854. *Schreb.* 1062. *Plum. gen. t.* 23. *Dill. elth.* 49. *t.* 57.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Perſonatæ*.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted: *leaflets* blunt, upright, permanent.

COR. one-petalled, ringent: *tube* long, cylindric; *border* gaping: *upper lip* upright, emarginate; *lower* revolute, ſemitrifid, the ſize of the upper.

STAM. *Filaments* four, ſubulate, bending to the upper lip, the length of the corolla: two higher. *Anthers* ſimple.

PIST. *Germ* ovate. *Style* ſimple; ſituation and length of the ſtamens. *Stigma* bifid, blunt.

PER. *Drupe* ovate, with the top oblique.

SEED. *Nut* oval, one-celled, germinating.

ESSENTIAL CHARACTER.

*Cal.* five-parted. *Cor.* two-lipped: lower lip three-parted, revolute. *Drupe* ovate, one-ſeeded, with the end oblique.

SPECIES.

1. Bontia daphnoides. *Barbadoes Wild Olive.*
*Lin. ſpec.* 890. *ſyſt.* 579. *Reich.* 3. 200. *Jacqu. amer. pict.* 88. *t.* 161. *f.* 57. *Plum. gen.* 32. *Dill. elth. t.* 49. *f.* 57. *Pluk. phyt.* 269. *t.* 209. *f.* 3. *Raii dendr.* 47. *n.* 6. *Labat. itin.* 3. 84. (Olea.)

*Leaves alternate, peduncles one-flowered.*

DESCRIPTION, *&c.*

[Leaves thickiſh, rather ſtiff, very ſmooth, green on both ſides; the lower ones very ſlightly toothed. Corolla yelloviſh, with a line of duſky purple along the middle of the lower lip.

Birds grow fat upon the fruits, but unleſs the entrails are taken out as ſoon as the bird is killed, it becomes too bitter to be eaten. It flowered in Dr. Sherard's garden at Eltham, in *june* 1723[a]: but it had been introduced into this country earlier, namely in 1690, by Mr. Bentick[b].]

PROPAGATION AND CULTURE.

It is greatly cultivated in the gardens at Barbadoes, for making hedges, than which there is not a more proper plant for thoſe hot countries, it being an Evergreen, and of quick growth. I have been informed, that from cuttings (planted in the rainy ſeaſon, when they have immediately taken root) there has been a complete hedge four or five feet high, in eighteen months. And as this will very well bear cutting, it is formed into a very cloſe thick hedge, which makes a beautiful appearance. In Europe it may be raiſed from ſeeds, which ſhould be ſown on a hot-bed early in the ſpring (that the plants may acquire ſtrength before winter.) When the plants are come up, they muſt be tranſplanted out each into a ſeparate halfpenny pot filled with light freſh earth, and plunged into a moderate hot-bed of tanners bark, obſerving to water and ſhade them until they have taken root; after which they muſt have a large ſhare of air in warm weather, and be often refreſhed with water. In winter they muſt be placed in the ſtove, where they ſhould have a moderate degree of warmth, and but little water during that ſeaſon. In ſummer they muſt have a great ſhare of air, but will not do well if expoſed abroad, eſpecially in cold ſummers; ſo that they ſhould remain in the ſtove among plants which require a great ſhare of air, which may be admitted by opening the glaſſes in very hot weather. With this management, theſe plants will produce flowers and fruit in three or four years from ſeed. They may alſo be propagated by cuttings, which ſhould be planted in the ſummer. They muſt be put into pots filled with light rich earth, and plunged into a moderate hot-bed, obſerving to water and ſhade them until they have taken root; after which they muſt be treated as hath been directed for the ſeedling plants. Theſe plants being evergreen, and growing in a pyramidal form, make a pretty variety in the ſtove amongſt other exotic plants.

[BONTIA GERMINANS. See *Avicennia*.

BONTIA LUZONICA. See *Epidendrum*.]

BONUS HENRICUS. See *Chenopodium*.

[BOOTIA. See *Saponaria officinalis*.

BORAGE & BORAGINOIDES. See *Borago*.]

BORAGO. (*q. Corago, from cor & ago; on account of its ſuppoſed cordial qualities.*)

*Lin. gen. n.* 188. *Reich.* 200. *Schreb.* 228. *Tournef.* 53. Boraginoides. *Boerh.* 1. 88. Cynogloſſoides. *Iſnard. act. gall.* 1718. *t.* 10.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Aſperifoliæ*.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, permanent.

COR. monopetalous, rotate, length of the calyx: *tube* ſhorter than the calyx: *border* five-parted, rotate, flat: *throat* crowned with five emarginate, obtuſe prominencies.

STAM. *Filaments* five, ſubulate, converging. *Anthers* oblong, fixed to the inſide of the filaments in the middle, converging.

[a] Dillenius. [b] Hort. kew.

PIST.

PIST. *Germ* four. *Style* filiform, longer than the ſtamens. *Stigma* ſimple.

PER. none. *Calyx* larger, inflated.

SEEDS four roundiſh, wrinkled, keeled outwards at the top, globular at the baſe, inſerted longitudinally into a hollowed receptacle.

OBS. *The diviſions of the calyx differ in their form, and the tube of the corolla differs in ſize.*

ESSENTIAL CHARACTER.

*Corl* rotated, throat cloſed with rays.

SPECIES.

1. Borago officinalis. *Common Borage.*
*Lin. ſpec.* 197. *ſyſt.* 188. *Reich.* 397. *hort. upſ.* 34. *cliff.* 44. *mat. med.* 57. *Hudſ. angl.* 82. *With.* 198. *Sowerby engl. bot. t.* 36. *Relh. cantabr. n.* 152. *Hall. helv. n.* 607. *Plenck, ic. t.* 77. *Blackw. t.* 36. *Sabb. hort.* 2. *t.* 20, 21. *Mor. hiſt.* 437. *ſ.* 11. *t.* 26. *f.* 1. *Ger.* 653. 1, 2. *emac.* 797. 1, 2. *Bauh. hiſt.* 3. 574. *Raii hiſt.* 493.
*All the leaves alternate, calyxes ſpreading.*

2. Borago indica. *Indian Borage.*
*Lin. ſpec.* 197. *Reich.* 397. *hort. cliff.* 45. *fl. zeyl. n.* 71. *Murr. prodr.* 142.
Cynogloſſoides. *Iſn. act. gall.* 1718. 325. *t.* 10.
Anchuſæ degeneris facie, &c. *Pluk. aim.* 30. *t.* 76. *f.* 3. bad.
*Leaves of the ramifications oppoſite, ſtem-claſping; peduncles one-flowered.*

3. Borago africana. *African Borage.*
*Lin. ſpec.* 197. *ſyſt.* 188. *Reich.* 398. *hort. cliff.* 55. *Murr. prodr.* 142.
Cynogloſſoides. *Iſn. act. t.* 11.
Cynogloſſum, &c. æthiopicum. *Pluk. alm.* 34.
*Leaves oppoſite petiolate ovate, peduncles many-flowered.*

[4. Borago zeylanica. *Ceylon Borage.*
*Lin. ſyſt.* 188. *Reich.* 398. *mant.* 202. *Burm. ind.* 41. *t.* 14. *f.* 2.
Anchuſa bugloſſoides. *Pluk. mant.* 13. *t.* 335. *f.* 4.
*Branch-leaves alternate ſeſſile, peduncles one-flowered, calyxes earleſs.*]

5. Borago orientalis. *Oriental Borage.*
*Lin. ſpec.* 197. *ſyſt.* 188. *Reich.* 399. *hort. cliff.* 45. *Sabb. hort.* 2. *t.* 22.
B. conſtant. fl. reflexo cœruleo, calyce veſicario. *Tournef. cor.* 6. *itin. t.* 523. *Buxb. cent.* 5. 16. *t.* 30. *Mill. fig. t.* 68.
*Calyxes ſhorter than the tube of the corolla, leaves cordate.*

DESCRIPTIONS, *&c.*

1. [The whole plant of *Common Borage* is rough with white ſtiff prickly hairs[a]. Peduncles terminating, many-flowered. Calyx divided to the very baſe, as is alſo the corolla, but it falls off in one piece; tube very ſhort and white; ſegments acute. Filaments very ſhort, white, ſpringing from the claws of the petal, with a ſharp blue proceſs, where the anthers are inſerted; theſe are dark purple or blackiſh, and form a kind of *umbo* in the middle of the flower, round the ſtyle. The common colour of the corolla is blue; but it varies to fleſh-coloured, and white. It is a biennial plant; flowering from may to auguſt. It came originally from Aleppo, but is now naturalized in moſt parts of Europe. We have it in England on dunghills and heaps of rubbiſh frequently.

Borage was formerly in great requeſt, being reckoned one of the four cordial flowers. Very light ſurely, ſays an ingenious author, were thoſe ſorrows that could be ſo driven away. Yet Borage flowers are at leaſt innocent, which is more than can be ſaid of many other general remedies for care. The whole herb is ſucculent and very mucilaginous, having a peculiar faint ſmell when bruiſed[b]. The juice affords a true nitre. The plant is now ſeldom taken inwardly, except as an ingredient in cool tankards. The young tender leaves may be uſed in ſalads, or as a pot-herb[c].

2. This is an annual plant, rarely riſing a foot high. Stem branching, hiſpid, gibbous at the origin of the leaves and branches. Leaves lanceolate, rugged; the lower oppoſite, the upper alternate. Branches ſpreading, alternate. Peduncles ſhort, bowing, axillary. Leaflets of the calyx cordate-ſagittate, five-angled, hiſpid. Corolla white or pale fleſh-colour, a little longer than the calyx[d].

Native of the Eaſt-Indies. Miller, who cultivated it in 1759, ſays Africa.

3. This reſembles the foregoing, but the whole plant is ſtronger and higher. Stem thicker, more divided, hiſpid with ſtiff fragile briſtles. Leaves much broader and more hiſpid. Peduncles divided and almoſt racemed, dry and red, with bowing pedicels. Leaflets of the calyx lanceolate, the angles not ſo conſpicuous, red and ſet with white hairs. Corolla nearly of the ſame length with the calyx, dirty white[e]. Native of the Cape of Good Hope. It is an annual plant, and was cultivated in 1759, by Mr. Miller[f].

4. Stem branching, hiſpid. Stem-leaves oppoſite, ſeſſile, lanceolate, hiſpid; branch-leaves more in number, ſmaller, and more acute. Peduncles at each branch-leaf filiform, ſolitary, one-flowered, longer than the leaves, hairy. Calyx the length of the corolla, erect, hoary, hairy, without the hinder apophyſes. Seeds ſmooth, and like bone, as in *Cerinthe*. It differs from the firſt and third ſorts in having one-flowered peduncles; from the ſecond, in the leaves not being ſtem-claſping, and the calyxes not ſpurred[g].

Native of the Eaſt-Indies.]

5. This is a perennial plant, with thick fleſhy roots, ſpreading under the ſurface. Root-leaves many, oblong, heart-ſhaped, on long, hairy foot-ſtalks. Flower-ſtem more than two feet high, having at the joints a ſingle, ſmall, ſeſſile leaf: the upper part branches out into ſeveral ſmall foot-ſtalks, which are terminated by looſe panicles of flowers, of a pale blue colour; the petal is turned back, ſo that the connected anthers and ſtyle are left naked. The ſeeds are ſmaller than thoſe of common Borage. It flowers in march, and the ſeeds ripen in may. When the flower-ſtalk firſt appears, the flowers ſeem collected into a cloſe ſpike, ſome of which often ſpread open before the ſtalk is ſix inches high; but as the ſtalks advance, they divide into many looſe ſpikes. Native of the country about Conſtantinople.

PROPAGATION AND CULTURE.

1. This is an annual plant, which, if permitted to ſcatter its ſeeds, the plants will come up in plenty without care; the ſeeds may alſo be ſown either in ſpring or autumn, but the latter ſeaſon is preferable, on a ſpot of open ground where the plants are deſigned to remain; when the plants have obtained a little ſtrength, the ground ſhould be hoed to deſtroy the weeds, and the plants muſt be cut up where they are too near each other, leaving them eight or ten inches aſunder. After this they will require no farther care, unleſs the weeds ſhould come up again; then the ground ſhould be a ſecond time hoed over to deſtroy them, which, if well performed, and in dry weather, will clear the ground from weeds, ſo it will require no more cleaning till the Borage is decayed. The plants which are raiſed in the autumn, will flower in may, but thoſe which are raiſed in the ſpring, will not flower till june; ſo that where a continuation of the flowers are required, there ſhould be a ſecond ſowing in the ſpring, about a month after the firſt; but this ſhould be on a ſhady border, and if the ſeaſon ſhould prove dry, the ground muſt be watered frequently, to bring up the plants; this latter ſowing will continue flowering till the end of ſummer.

2, 3, 4. The ſeeds of theſe plants ſhould be ſown upon a hot-bed in march, and when the plants are ſtrong enough to be removed, they ſhould be each planted in a ſmall pot filled with light earth, and plunged into a new hot-bed to bring them forward, otherwiſe they will not perfect their ſeeds in this

[a] Withering. [b] Engliſh Botany. [c] With. [d] Murray. [e] Ibid. [f] Hort. kew. [g] Linn.



country;

country; but in hot weather they muſt have a great ſhare of air, otherwiſe they will draw up weak, and fail before the ſeeds are ripe.

5. Is eaſily propagated by the root, which may be parted in the autumn: it ſhould have a dry ſoil and a warm ſituation, for as the flower-ſtalks appear early in the ſpring, when they are much expoſed, they are often killed by the froſt; if it be planted in dry rubbiſh, it will not grow too luxuriant, nor be in danger of ſuffering by froſt. Some of the ſeeds of this have ſcattered into the joints of an old wall in the Chelſea garden, where the plants have grown without care for ſome years, and are never injured by cold or heat.

BORAGO. See *Cynogloſſum*.

[BORASSUS. (Βορασσος *Dioſcorides*. *Derivation uncertain.*)

*Lin. gen. n.* 1220. *Reich. n.* 1336. *Schreb.* 1689. *Muſ. cliff.* 13. Ampana *hort. mal.* 1. 10. Carimpana *hort. mal.* 1. 9.

Claſſ. 25. Appendix Palmæ. *Lin.*—Dioecia hexandria. *Thunb. act. Stockh.* 1782. 286.

GENERIC CHARACTER.

* *Male* Ampana.

CAL. *Spathe* univerſal, compound. *Spadix* amentaceous, imbricate.

COR. *Perianth proper* three-leaved: leaflets ovate, concave.

STAM. *Filaments* ſix, thickiſh. *Authers* thicker, ſtriated.

** *Female* Carimpana: *on a different plant.*

CAL. *Spathe* and *Spadix* as in the male.

COR. *Perianth proper* three-leaved permanent: *leaflets* roundiſh, obtuſe. *Petals* three, roundiſh, ſmall, acute, permanent.

PIST. *Germ* roundiſh. *Styles* three, ſmall. *Stigmas* ſimple.

PER. *Berry* (*Drupe*) roundiſh, obtuſe, rigid, one-celled.

SEEDS three, ſubovate, compreſſed, diſtinct, filamentoſe.

ESSENTIAL CHARACTER.

*Cor.* three-parted. Male. *Stam.* ſix. Female. *Styles* three. *Drupe* three-ſeeded.

SPECIES.

1. Boraſſus flabelliformis.

*Lin. ſpec.* 1657. *Jyſt.* 784. *Reich.* 4. 632. *ſ. zeyl. n.* 395.

Palma coccifera. *Raii hiſt.* 1366. *n.* 1, 2.

Lontarus domeſtica. *Rumph. amb.* 1. 45. *t.* 10.

Ampana. *Rheed. mal.* 1. 13. *t.* 10. maſ. Carimpana. *p.* 11. *t.* 9. fœmina.

*Fronds palmate plaited cowled, ſtipes ſerrate.*

DESCRIPTION, *&c.*

The trunk is covered with a very dark-coloured bark; the wood is of a dark browniſh red, and has a ſoft pith in the middle. Fronds decuſſate on the top of the trunk; ſtipe near ſix feet in length, flat and ſomewhat hollow, and rough with ſpines along the edges: below near a ſpan in breadth, above not more than a palm. The leaf part is very large, wide, and folded like a fan or umbrella, for which purpoſe it is uſed; at the edges of the folds there are rough, prominent ribs, in front it is gaſhed, and the texture is cloſe and thick. The male and female flowers are on different trees, which have been conſidered as diſtinct ſpecies[a].

This tree is twenty-five or thirty feet in height, two feet thick at bottom and one at top. The fruit is the ſize of a child's head. A wine and a ſugar are made from the ſap of this Palm.

It is a native of Ceylon, the coaſt of Coromandel, Java, *&c.*[b]]

BORBONIA. (*So named from Gaſton Bourbon, Duke of Orleans.*)

*Lin. gen. n.* 857. *Reich.* 928. *Schreb.* 1165.

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ* or *Leguminoſæ*.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ſemiquinquefid, turbinate, half the length of the corolla: *diviſions* lanceolate, acuminate, rigid, pungent, ſubequal; the loweſt longer than the reſt.

COR. pentapetalous, papilionaceous, hirſute on the outſide. *Banner* reflected, obtuſe, claw the length of the calyx. *Wings* ſemicordate, a little ſhorter than the banner. *Keel* two-petalled, lunulate, obtuſe.

STAM. *Filaments* nine, united into a cylinder gaping longitudinally above, riſing at the ends. *Anthers* ſmall.

PIST. *Germ* ſubulate. *Style* very ſhort, aſcending. *Stigma* obtuſe, emarginate.

PER. *Legume* roundiſh, acuminate, one-celled, mucronate with a ſpine.

SEED kidney-form.

ESSENTIAL CHARACTER.

*Cal.* acuminate-ſpiny. *Stigma* emarginate. *Legume* mucronate.

SPECIES.

[1. Borbonia ericifolia.

*Lin. ſpec.* 993. *Reich.* 3. 398. *amæn.* 6. *afr.* 29. Geniſta africana, &c. *Raii dendr.* 105. *n.* 36.

*Leaves ſublinear acute villoſe, heads terminal.*

2. Borbonia lævigata.

*Lin. ſyſt.* 643. *Reich.* 3. 398. *mant.* 100.

*Leaves lanceolate nerveleſs ſmooth, involucres and calyxes rough with hairs.*]

3. Borbonia trinervia.

*Lin. ſpec.* 994. *Reich.* 3. 398. *hort. cliff.* 494. *Berg. cap.* 188.

Frutex æthiopicus, &c. *Pluk. alm.* 158. *t.* 297. *f.* 4.

*Leaves lanceolate three-nerved quite entire.*

4. Borbonia lanceolata. *Spear-leaved Borbonia.*

*Lin. ſpec.* 994. *Reich.* 3. 399.

Spartium africanum, &c. *Raii dendr.* 107. *n.* 63. *Comm. bort.* 2. 195. *t.* 98.

Frutex æthiopicus, &c. *Pluk. alm.* 159. *t.* 297. *f.* 3.

*Leaves lanceolate many-nerved quite entire.*

5. Borbonia cordata. *Heart-leaved Borbonia.*

*Lin. ſpec.* 994. *Reich.* 3. 399. *mant.* 488. *hort. cliff.* 494.

Geniſta africana, &c. *Seb. theſ.* 1. 38. *t.* 24. *f.* 3. *Breyn. cent. t.* 28.

*Leaves cordate many-nerved quite entire.*

[6. Borbonia crenata. *Notch-leaved Borbonia.*

*Lin. ſpec.* 994. *Reich.* 3. 399. *Berg. cap.* 191. *Pluk. alm.* 159. *Breyn. cent.* 69. *t.* 28.]

*Leaves cordate many-nerved toothletted.*

DESCRIPTIONS, *&c.*

Theſe plants grow naturally at the Cape of Good Hope, where they riſe to the height of ten or twelve feet; but in Europe they ſeldom are more than four or five; having ſlender ſtems, divided into ſeveral branches, with ſtiff leaves placed alternately.

[1. The firſt ſort is a ſmall ſubvilloſe ſhrub. Leaves ſmall, ovate-linear, nerveleſs, ſmooth above, villoſe beneath, revolute. Heads ſeſſile, with ſmall flowers[c].

2. Branches round, ſubvilloſe towards the top. Leaves ſeſſile, pointed. Umbellules terminating, on very ſhort pedunclcs. Involucre four-leaved, ovate, concave, erect. Pedicels in fours, ſhorter than the involucre. Calyx bell-ſhaped, flat at the baſe, five-cleft with the upper cleft ſmaller than the others, acute, ſhorter than the corolla, which is yellow. Germ hirſute. Within the calyx are ſome nectareous ſcales. It is named by others *Liparia umbellata*[d].]

3. This has ſtronger ſtalks than either of the two following ſorts. They have ſtiff lanceolate leaves, with three longitudinal nerves, as have alſo the branches, almoſt their whole length; and they are placed cloſer together than in the others. The flowers are produced at the extremities of the branches, each on a ſeparate peduncle: they are of the ſame ſhape and colour with the two following, but larger.

4. [Stem a foot high, ſmooth, round, and aſh-coloured; divided into a few branches, which are red whilſt young. Leaves ſtem-claſping[e],] long, narrow,

[a] Ray. [b] Rumphius.

[c] Linn. amæn. [d] Linn. mant. [e] Ray.

narrow, ending in a ſharp point. The flowers come out from between the leaves at the ends of the branches in ſmall cluſters: they are yellow, and ſhaped like thoſe of Broom. It flowers in auguſt and ſeptember; [and was cultivated in 1748, by Mr. Miller[f].]

5. This has broader leaves than the foregoing ſort. The ſtalks are ſlender, and covered with white bark. Leaves ſtem-claſping, and terminated by ſharp points, like thoſe of Knee-holm or Butcher's Broom. The flowers are produced in ſmall cluſters at the ends of the branches, and are of the ſame ſhape and colour as thoſe of the foregoing ſort, but larger. [Calyx five-cleft, nearly regular, hirſute, with ſpiny ſegments. The whole corolla is tomentoſe on the outſide[g].

6. Leaves ſtem-claſping, net-veined, and pointed. Flowers in racemes[h]. It was introduced here from the Cape in 1774, by Mr. Fr. Maſſon[i].]

PROPAGATION AND CULTURE.

As theſe plants do not perfect their ſeeds in this country, they are with difficulty propagated here. The only method by which I have yet ſucceeded, has been by laying down their young ſhoots; but theſe are commonly two years before they put out roots fit to be ſeparated from the old plant. In laying theſe down, the joint which is laid in the ground ſhould be ſlit upward, as is practiſed in laying Carnations, and the bark of the tongue at bottom taken off. The beſt time is the beginning of ſeptember; and the ſhoots moſt proper for this purpoſe, are thoſe which come out immediately, or very near the root, and are of the ſame year's growth, not only from their ſituation being near the ground, and thereby better adapted for laying, but theſe are alſo more apt to put out roots than any of the upper branches.

But where good ſeeds can be procured, that is the more eligible method of propagating the plants: for thoſe raiſed from the ſeeds make the ſtraighteſt plants, and are quicker of growth. They ſhould be ſown in pots filled with light loamy earth, as ſoon as they are received; if it happens in the autumn, the pots ſhould be plunged into an old bed of tanner's bark, under a frame, where they may remain all the winter, being careful that they are ſecured from froſt, and have not much wet. In the ſpring, the pots ſhould be plunged into a hot-bed, which will bring up the plants in five or ſix weeks. When theſe are fit to remove, they ſhould be each planted into a ſeparate ſmall pot, filled with the like loamy earth, and plunged into a moderate hot-bed, obſerving to ſhade them until they have taken freſh root, as alſo to refreſh them with water, as they may require it. After this they muſt by degrees be inured to the open air, into which they ſhould be removed in june, and placed in a ſheltered ſituation, where they may remain till autumn, when they muſt be removed into the green-houſe, and placed where they may enjoy the air and ſun; during the winter ſeaſon, theſe plants muſt be ſparingly watered; but in ſummer, when they are placed abroad, they will require to be frequently refreſhed, but muſt not have too much water given them each time.

Theſe plants make a pretty variety in the green-houſe in winter, and as they do not require any artificial heat to preſerve them, they are worthy of a place in every garden where there is conveniency for keeping them.

[BORBONIA tomentoſa. See *Liparia*.

BORECOLE. See *Braſſica*.

BORRAGO. See *Borago*.]

BOSEA. (*From Boſe, a Senator of Leipſic.* Lin.)
*Lin. gen. n.* 315. *Reich.* 344. *Schreb.* 442.
Claſſ. 5. 2. Pentandria Digynia.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved, equal: *leaflets* roundiſh, concave, erect, thinner at the edge.
COR. none.
STAM. *Filaments* five, ſubulate, longer than the calyx: *Anthers* ſimple.
PIST. *Germ* ovate-oblong, cuſpidate. *Style* none. *Stigmas* two.
PER. *Berry* globular, one-celled.
SEED one, round, acuminate.

OBS. *There is a very great affinity therefore between this genus and thoſe of* Celtis *and* Ulmus.

ESSENTIAL CHARACTER.

*Cal.* five-leaved. *Cor.* none. *Berry* one-ſeeded.

SPECIES.

1. Boſea Yervamora. *Golden-rod tree.*
*Lin. ſpec.* 326. *Reich.* 631. *hort. cliff.* 84. *Pluk. alm.* 42. *Sloan. jam.* 2. 19. *t.* 158. *f.* 3. *Raii dendr.* 88. *n.* 2. *Walth. hort.* 24. *t.* 10.

DESCRIPTION, *&c.*

It is a pretty ſtrong woody ſhrub, with a ſtem as large as a middling perſon's leg; the branches come out very irregularly, and make conſiderable ſhoots in ſummer, which ſhould be ſhortened every ſpring, to preſerve the heads of the plants in any tolerable order: theſe branches retain their leaves till towards the ſpring, when they fall off, and new leaves are produced ſoon after.

[Bark reddiſh-brown, ſmooth; wood white. Leaves two inches long, and one and a half broad, roundiſh, broader at the baſe, blunt at the end, white underneath, on ſhort petioles; ribs purple. The flowers come out of the ends of the twigs, on alternate pedicels, at the baſe of which is a ſtipule. Calyx purpliſh, ſix-leaved. Seed black*.

It is a native of the Canary iſlands, whence it was firſt brought into England, and cultivated by Mr. Miller before 1728. It has alſo been found ſince in ſome of the Britiſh Weſt-India iſlands.]

PROPAGATION AND CULTURE.

It may be propagated by cuttings in the ſpring; and the plants muſt be houſed in winter.

BOTRYS. See *Chenopodium* and *Teucrium*.

[BOURRERIA. See *Ehretia*.

BOVISTA. See *Lycoperdon*.

BOX-THORN. See *Lycium*.]

BOX-TREE. See *Buxus*.

BRABEIUM. (*From* Βραβεῖον, *a ſceptre, Lin.*)
*Lin. gen. n.* 160. *Reich.* 1262. *Schreb.* 1580. *mant.* 337. 332.
Claſſ. 23. 1. Polygamia Monoecia.

GENERIC CHARACTER.

CAL. *Ament* with ovate, obtuſe, three-flowered, pubeſcent ſcales.
COR. one-petalled, funnel-form, four-parted; *diviſions* linear, obtuſe, rolled back at top, deciduous.
STAM. *Filaments* four, capillary, inſerted into the baſe of the ſegments of the corolla, and ſcarcely ſo long as that. *Anthers* ſmall, gaping on the ſides.
PIST. *Germ* very ſmall, villoſe. *Style* filiform, the length of the ſtamens, ſomewhat thicker at top. *Stigma* ſimple.
PER. *Drupe* very dry, roundiſh, villoſe.
SEED. *Nut* globular.

* *Male in the ſame tree.*

CAL. *Ament* as in the hermaphrodites.
COR. one-petalled, funnel-form, four or five-cleft: *clefts* oblong, revolute.
STAM. *Filaments* four or five, inſerted into the throat, of a middling length. *Anthers* oblong, faſtened to the inſide of the filaments, except the tip.
PIST. *Germ* none. *Style* filiform, of a middling length. *Stigmas* two, erect.

ESSENTIAL CHARACTER.

HERM. Scales of the ament. *Cor.* four-parted, revolute above. *Stam.* four. *Piſt.* one. *Drupe* roundiſh. *Seed* globular.
MALE. Scales of the ament. *Cor.* four or five-parted. *Stam.* four inſerted into the throat. *Style* bifid, abortive.

SPECIES.

1. Brabeium Stellulifolium. *African Almond.*
*Lin. ſyſt.* 910. *Reich.* 4. 327. *mant.* 332.

[f] Hort. kew. [g] Linn. [h] Ibid. [i] Hort. kew. [k] Sloane.

B. ſtellatifolium. *Lin. ſpec.* 177. *hort. cliff.* 36. *Mill. dict.*

Amygdalus æthiopica, fructu holoſericeo. *Breyn. cent.* 1. *t.* 1. *Pluk. alm.* 47. *t.* 265. *f.* 3.

Brabyla capenſis. *Mant.* 1. 137.

DESCRIPTION, *&c.*

This tree riſes with an upright ſtem, which is ſoft and full of pith, and covered with a brown bark. Horizontal branches are ſent out at every joint, the lower ones being longeſt, and every tier diminiſhing to the top, ſo as to form a ſort of pyramid. There are leaves at each joint, from four to five inches long, and half an inch broad in the middle, of a deep green on their upper ſide, but of a pale ruſſet colour on their under, indented on their edges, ſtanding on very ſhort foot-ſtalks. The flowers are produced towards the ends of the ſhoots, coming out from between the leaves quite round the branches: they are of a pale colour, inclining to white: appear early in the ſpring, and fall away without any fruit ſucceeding them in this country.

[It is an amentaceous tree, with thick branches. Leaves in whorls with large ſerrations. Aments pubeſcent, with ovate, obtuſe, three-flowered ſcales. Stamens and ſtyle the length of the corolla*.

*Brabyla capenſis*, deſcribed in *Mant.* 137. is probably the ſame tree bearing hermaphrodite flowers. The branches are rigid, purple, ſtreaked, ſubvilloſe. Leaves in whorls of ſeven, petioled, lanceolate, rather rigid, with remote ſerrations, a hand's breadth long, ſmooth above, netted beneath: petioles erect, pubeſcent. Aments oblong, cylindric, petioled, round, erect, lateral, often two between each leaf, ſhorter than the leaves, rather rigid, two inches long, imbricate: ſcales ovate, acute, many-flowered. Corollule funnel-ſhaped, five-cleft. Stamens five. Style one.]

It is a native of the country about the Cape of Good Hope, where it becomes a tree of middling growth; but in Europe it ſeldom grows above eight or nine feet high.

PROPAGATION AND CULTURE.

This tree is with difficulty propagated by layers, which are often two years before they make roots ſtrong enough to be taken from the old plants: when the branches are laid down it will be a good method to ſlit them at a joint, as is practiſed in laying Carnations, which will promote their taking root.

Theſe muſt have but little water given them, eſpecially in winter, for as the young ſhoots are chiefly pith within, they are very apt to rot with much moiſture. The beſt time to make the layers is in april, juſt as the plants are beginning to ſhoot; and they muſt always be made of the former year's ſhoots.

The plants muſt have a good greenhouſe in winter; but in ſummer they ſhould be ſet abroad in a ſheltered ſituation, where they will thrive, and annually produce flowers in the ſpring, making a pretty variety among other exotic plants.

[BRABYLA. See *Braheium*.

BRACHYGLOTTIS. See *Cineraria*.

BRADLEJA. (*So named from Richard Bradley, F.R.S. the firſt profeſſor of botany at Cambridge.*)

*Lin. gen. Schreb. n.* 1474. *Gærtn.* Glochidion. *Forſt. gen.* 57.

Claſſ. 21. 8. Monoecia Monadelphia.

GENERIC CHARACTER.

* *Male flowers.*

CAL. none.

COR. *Petals* ſix, ovate, concave, ſpreading, nearly equal.

STAM. *Filaments* three, extremely minute. *Anther* cylindric, erect, formed of three united twin anthers, tipped at the point with a cuſp or ſpearlet.

* *Female flowers.*

CAL. none.

COR. one-petalled, ſix-parted, inferior: three of the *parts* interior.

PIST. *Germ* globoſe, ſix-furrowed, ſuperior. *Style* none. *Stigmas* ſix to eight, very ſmall, converging.

PER. *Capſule* depreſſed, round, twelve-ſtreaked, ſix-celled, ſix-valved, gaping.

SEED ſolitary, ſomewhat globoſe.

ESSENTIAL CHARACTER.

MALE. *Cal.* none. *Cor.* Petals ſix, nearly equal. *Filaments* three, with three twin anthers.

FEM. *Cal.* none. *Cor.* ſix-parted, three parts interior. *Germ* ſuperior, with ſix to eight ſtigmas. *Capſ.* ſix-celled, ſix-valved. *Seed* ſolitary.

SPECIES.

1. Bradleja ſinica. *Chineſe Bradleja*, is a ſhrub with leaves reſembling the Annona, but not of a lucid ſurface. The fructifications proceed from the axils of the leaves. The fruits, or ſeed-veſſels, are compreſſed, ſmall, orbicular, ſtriated, and hard.

2. Bradleja Zeylanica, is a Ceyloneſe ſhrub.

3. Bradleja Glochidium, is a ſhrub which grows in the iſlands of the Southern or Pacific ocean.]

BRANCA URSINA. See *Acanthus* and *Heracleum*.

BRASSICA. (*From βράσσω, ebullio Lin.—others a præſecando—or q. Paſſica—or q. πραστὴ a garden herb.* See more in *Voſſius.*)

*Lin. gen.* 820. *Reich.* 884. *Schreb.* 1096. *Tournef.* 106. *Raii metb.* 95. Rapa. *Tourn.* 113. *Rait metb.* 95.

Claſſ. 15. 2. Tetradynamia Siliquoſa.

Nat. order of *Siliquoſæ* or *Cruciformes*. *Cruciferæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-leaved, erect: *leaflets* lanceolate-linear, concave-channelled, gibbous at the baſe, erect, parallel, deciduous.

COR. tetrapetalous, cruciform. *Petals* ſubovate, flat, expanding, entire, gradually leſſening into claws nearly the length of the calyx.

*Nectareous glands* four ovate; of which one on each ſide between the ſhorter ſtamen and the piſtil, and one on each ſide between the longer ſtamens and the calyx.

STAM. *Filaments* ſix, ſubulate, erect: of theſe two oppoſite ones are of the length of the calyx; and four longer. *Anthers* erect, acuminate.

PIST. *Germ* columnar, the length of the ſtamens. *Style* ſhort; the thickneſs of the germ. *Stigma* capitate, entire.

PER. *Silique* long, ſomewhat like the ſhaft of a column, but flatted on both ſides: *partition* with a prominent columnar top, two-celled, two-valved; *valves* ſhorter than the partition.

SEEDS many globular.

OBS. Napus T. *ſcarcely differs in appearance from* Rapa.

Rapa T. *has the calyx of the ſame colour with the corolla.*

Braſſica T. *has a greeniſh calyx.*

ESSENTIAL CHARACTER.

*Cal.* erect, converging. *Seeds* globular. A *gland* between the ſhorter ſtamens and the piſtil, and between the longer and the calyx.

SPECIES.

* *Style bluntiſh.*

1. Braſſica orientalis. *Perfoliate Cabbage.*
*Lin. ſpec.* 931. *Syſt.* 601. *Reich.* 3. 276. *Hudſ. angl.* 290. *With.* 706. *Jacqu. auſtr.* 3. 45. *t.* 282. *Pollich pal. n.* 639. *Allion. pedem. n.* 964. *Mill. dict. n.* 7.
Eruca. *Hall. helv. n.* 457. B. campeſtris. *Lin. ſuec. Hallerum.* B. Turrita. *Wiggers.*

B. campeſtris. *Baub. pin.* 112. *n.* 4. *Cluſ. hiſt.* 2. 127. *Segu. ver.* 1. 380. *Raii ſyn.* 293. *n.* 2. *hiſt.* 797. *n.* 20. & 3. 410. *n.* 9.
Perfoliata ſiliquoſa. *Baub. hiſt.* 2. 835. 3. 4. *Ger.* 430. 2. *emac.* 536. 2. *Park.* 580. 9.
*Leaves cordate, ſtem-claſping, ſmooth; root-leaves ſcabrous, quite entire; ſiliques four-cornered.*

[2. Braſſica auſtriaca. *Auſtrian Cabbage.*
*Lin. ſyſt.* 601. *Jacqu. auſt.* 3. *t.* 283.
*Leaves cordate, ſtem-claſping, ſmooth, all quite entire; ſiliques four-cornered, ſtriated, erect.*

3. Braſſica campeſtris. *Yellow Field Cabbage.*
*Lin. ſpec.* 931. *ſyſt.* 601. *Reich.* 3. 276. *ſuec. n.* 608. *hort. cliff.* 339. *Fl. dan. t.* 550? *Hudſ. angl.* 290. *With.* 707.
B. camp perſoliata fl. luteo. *Lœſ. pruſſ.* 29. *Lin. lapp.* 265.
*Root and ſtem ſlender; ſtem-leaves uniform cordate ſeſſile.*]
4. Braſſica arvenſis. *Purple Field Cabbage.*
*Lin. ſyſt.* 601. *Reich.* 3. 277. *mant.* 95. 568. *Ger. prov.* 368.
B. purpurea. *Mill. dict. n.* 6.
B. campeſtris perfoliata fl. purpureo. *Baub. pin.* 112. *Cluſ. hiſt.* 2. 127. *Raii hiſt.* 798.
B. ſylveſtris, fabariæ foliis. *Bocc. ſic.* 49. *t.* 29. *f.* 3, 4.
Perfoliata filiquoſa purpurea. *Baub. hiſt.* 2. 836.
*Leaves ſtem-claſping ſpatulate repand; the upper cordate quite entire.*
[5. Braſſica alpina. *Alpine Cabbage.*
*Lin. ſyſt.* 601. *Reich.* 3. 277. *mant.* 95. *Pollich pal. n.* 640. *Allion. pedem. n.* 968. *Vill. proſp.* 40. *t.* 20. *f.* 1.
Turritis. *Hall. helv. n.* 454. *Grim. nov. act. nat. cur.* 3. 77.
T. pauciflora. *Grim. iſen. nov. act. cur.* 3. *app.* 348.
T. Braſſica. *Leers herborn. n.* 518.
Br. alpina perennis. *Mapp. alſat.* 42.
Br. ſylveſtris alpina. *Baub. prodr.* 54.
*Stem-leaves cordate-ſagittate ſtem-claſping; radical leaves ovate: petals erect.*]
6. Braſſica Napus. *Wild Cabbage, Rape,* or *Navew.*
*Lin. ſpec.* 931. *Reich.* 3. 278. *ſuec.* 609. *mat. med.* 162. *hort. cliff.* 339. *Hudſ. angl.* 290. *With.* 707. *Lightf. ſcot.* 359. *Dalib. par.* 199. *Gmel. ſib.* 3. 267. *Crantz. auſt.* 38. *Blackw. t.* 224.
B. gongylodes. *Mill. dict. n.* 8.
Napus ſylveſtris. *Baub. pin.* 95. *Baub. hiſt.* 2. 843. *Mor. hiſt.* 2. 214. *ſ.* 3. *t.* 2. *f. ult. Raii hiſt.* 802.
Bunias. *Ger.* 181. 2. *emac.* 235. 2. *Park.* 865. *Pet. brit. t.* 45. *f.* 9.
β. N. ſativa. *Coleſeed,* or *Rape.*
*Baub. pin.* 95. *Mor. ſ. penult. Raii hiſt.* 801. *Ger.* 181. 1. *emac.* 235. 1.
*Root cauleſcent fuſiform.*
7. Braſſica Rapa. *Turnep.*
*Lin. ſpec.* 931. *Reich.* 3. 278. *mat. med.* 163. *hort. cliff.* 339. *upſ.* 190. *Hudſ. angl.* 289. *With.* 708. *Blackw. t.* 231.
Rapa rotunda. *Mill. dict. n.* 1.
R. ſativa rotunda. *Baub. pin.* 89. *Mor.* 2. 213. *ſ.* 3. *t.* 2. *f.* 1. *Petiv. brit. t.* 47. *f.* 7. *Raii hiſt.* 800. *n.* 1 & 3.
Rapum majus & minus. *Ger.* 177. 1, 2. *emac.* 232. 1. *Fuchſ.* 212. *Trag.* 728. *Matth.* 346. 1. *Lob. kruydtb.* 235. *obſ.* 98. 1. *ic.* 197. 1. *Cam. epit.* 218.
β. R. ſat. oblonga. *Baub. pin.* 89. *Raii hiſt. n.* 2. *Baub. hiſt.* 2. 838. *Mor. n.* 2. *Ger. emac.* 232. 2. *Matth.* 346. 2. *Petiv. brit. t.* 45. *f.* 8.
R. oblonga. *Mill. dict. n.* 2.
γ. Rapa Napus. *French Turnep.*
*Mill. dict. n.* 3.—*Root fuſiform.*
*Root cauleſcent orbicular depreſſed fleſhy.*
8. Braſſica oleracea. *Common Cabbage.*
*Lin. ſpec.* 932. *Reich.* 3. 278. *hort. cliff.* 338. *upſ.* 189. *mat. med.* 163. *Hudſ. angl.* 289. *With.* 708.
α. B. oler. ſylveſtris. *Sea Cabbage. Wild Colewort.*
*Mor. hiſt.* 2. 208. *n.* 15. *Raii hiſt.* 796. *n.* 13. *Mill. dict. n.* 4. *Petiv.* 45. 6.
β. B. oler. viridis. *Green Colewort.*
*Baub. pin.* 111. 1. *Raii hiſt.* 796. 10. *Ger. emac.* 313. 6.
γ. B. oler. capitata rubra. *Red Cabbage.*
*Baub. pin.* 111. 4. *Raii hiſt.* 795. 2. *Ger. emac.* 313. 5.
δ. B. oler. capitata alba. *Heading white Cabbage.*
*Baub. pin.* 111. 1. *Raii hiſt.* 794. 1. *Mill. dict. n.* 1. *Ger. emac.* 312. 4.
B. oler. fabauda. *Savoy Cabbage.*
*Baub. pin.* 111. 1. alba criſpa. *Raii hiſt.* 795. 3. *Ger. emac.* 315. 12.
ζ. B. oler. laciniata. *Purple Borecole.*
B. lacin. rubra. *Baub. hiſt.* 2. 832. *Raii hiſt.* 796. *n.* 8.
η. B. oler. ſelenifia. *Green Borecole.*
*Baub. pin.* 112. 2. anguſto apii fol.—*Raii hiſt.* 797. *n.* 17. *Ger. emac.* 315. 13.
ϑ. B. oler. ſabellica. *Siberian Borecole,* or *Scotch Kale.*
B. fimbriata. *Baub. pin.* 112. 3. *Raii hiſt.* 796. *n.* 12. *Renealm. ſpec. t.* 133.
ι. B. oler. botrytis. *Cauliflower,* and *Broccoli. Mill. dict. n.* 3.
B. cauliflora. *Baub. pin.* 111. *Renealm. ſpec. t.* 133. *Ger. emac.* 314. 9.
κ. B. oler. Napobraſſica. *Turnep-rooted Cabbage. Mill. dict. n.* 2.—rad. napiformi. *Tourn. inſt.* 219. Napobraſſica. *Baub. pin.* 111. *prodr.* 54. *Raii hiſt.* 797. *n.* 19.
*Root cauleſcent columnar fleſhy.*
[9. Braſſica chinenſis. *Chineſe Cabbage.*
*Lin. ſpec.* 932. *ſyſt.* 601. *Reich.* 3. 279. *amæn.* 4. 281. *act. petrop.* 1761. 331.
*Leaves oval, almoſt quite entire; the floral ones ſtem-claſping, lanceolate: calyxes longer than the claw of the petals.*]
10. Braſſica violacea.
*Lin. ſpec.* 932. *Reich.* 3. 279. *hort. upſ.* 191. *Mill. dict. n.* 5.
*Leaves lanceolate-ovate ſmooth undivided toothed.*
[11. Braſſica polymorpha.
*Lin. ſyſt.* 601. *Murr. in. comm. gott.* 1776. 35. *t.* 6.
*Inferior leaves linear-lanceolate pinnatifid-toothed, upper ſubulate entire.*
** *Erucas, with an enſiform ſtyle to the ſiliques.*
12. Braſſica Erucaſtrum. *Wild Rocket.*
*Lin. ſpec.* 932. *Reich.* 3. 279. *hort. cliff.* 337. (Siſymbrium.) *Crantz. auſtr.* 38. *n.* 4. *Pollich pal. n.* 641. *Vill. proſp.* 40. *t.* 20. *f.* 5.
Eruca. *Hall. helv. n.* 459. *Baub. hiſt.* 2. 862. 3.
Raphanus Erucaſtrum. *Crantz. crucif.* 111. *n.* 15.
Eryſimum Erucaſtrum. *Scop. carn. n.* 828.
*Leaves runcinate, ſtem hiſpid, ſiliques ſmooth and even.*]
13. Braſſica Eruca. *Garden Rocket.*
*Lin. ſpec.* 932. *Reich.* 3. 280. *hort. upſ.* 190. *mat. med.* 163. *Crantz. auſtr.* 38. *Blackw. t.* 242. *Allion. pedem. n.* 970.
Siſymbrium. *Lin. hort. cliff.* 337.
Sinapi. *Hall. helv. n.* 464.
Eruca ſativa. *Mill. dict.*
Eruca. *Baub. pin.* 98. *n.* 1. *Baub. hiſt.* 2. 859. *Raii hiſt.* 806. *n.* 1. *Ger. emac.* 246. *n.* 1.
Raphanus Eruca. *Crantz. crucif.* 111. *n.* 14.
*Leaves lyrate, ſtem hirſute, ſiliques ſmooth.*
[14. Braſſica veſicaria.
*Lin. ſpec.* 933. *Reich.* 3. 280. *hort. upſ.* 191. *D'Aſſo. aragon. n.* 627. *t.* 4.
Eruca. *Mor. hiſt.* 2. 28. *n.* 2. *Raii hiſt.* 807. *n.* 3.
*Leaves runcinate; ſiliques hiſpid, covered with a ſwelling calyx.*]
15. Braſſica muralis. *Wall Rocket.*
*Hudſ. angl.* 290. *Curt. lond.* 3. 38. *With.* 709.
Eruca. *Hall. n.* 461. *Matth.* 531. *fig. Baub. hiſt.* 2. 861. *fig. Raii hiſt.* 807. *n.* 4. *ſyn.* 296. *n.* 1. *Mor. hiſt.* 2. 230. *n.* 16. *Ger.* 191. 2. *emac.* 246. 2. *Park.* 818. 1. *Mill. dict. n.* 4.
*Leaves lanceolate ſinuate-ſerrate, ſmooth hiſp; ſtem erect, ſmooth.*

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[16. Braſſica Richerii.
*Allion. pedem. n.* 967. *t.* 58. *f.* 1. & *t.* 76. *f.* 2. *Vill. proſp.* 40. *t.* 20. *f.* 3. *Laugh.* 2. 331. *Ger. prov.* 367.
*Root cauleſcent; leaves petiolate ſubſerrate, upper linear-lanceolate entire; ſiliques four-cornered.*

DESCRIPTIONS, &c.

1. Petals white. All the leaves ſmooth*. Stem-leaves ovate, blunt at the end, heart-ſhaped at the

* Linn.



baſe,

baſe, ſmooth, glaucous, perfectly entire. Petals white with a tinge of ſtraw-colour. Siliques ſlender pointing upwards, and approaching the ſtem[b]. Root fuſiform. Stem erect, from four inches to a foot high and more, round, very ſmooth, dividing from the bottom into alternate branches. Root-leaves ſmaller, obovate, obtuſe, ſeſſile; ſtem-leaves alternate, claſping, perforated as it were by the ſtem, ovate, obtuſe, quite entire, all glaucous-green, very ſmooth, thickiſh, fleſhy. Raceme looſe, terminal. Corollas ſmall, white[c]. Mr. Hudſon affirms that this is very nearly allied to the *campeſtris*; and Dr. Stokes thinks it probable, that the plant of *hort. upſ.* ſuppoſed to be the *B. orientalis* of *Tourn. cor.* and our European ſpecies, are diſtinct. There is certainly great confuſion in the three firſt ſpecies of *Braſſica*, and in a genus ſo ſubject to vary, perhaps mere local differences may have been exalted into ſpecies.

Native of corn fields and cliffs, in the Levant, about Montpellier; in Germany, Switzerland, Auſtria, Carniola, Piedmont, *&c.* In England near Harwich; Bardſey near Orford, Suffolk; Godſtone, and Mareſfield, Suſſex. Annual, flowering in june.

2. Native of Auſtria, a biennial. Root white, rather woody, ſometimes branched, about half a foot long, very thin, with an acrid ſmell. Stem in the wild plant commonly ſingle; in the cultivated or garden ones generally more: about two feet high. Leaves entire, rounded at the ends, thick, glaucous, embracing the ſtalk, very ſmooth. The radical ones are obverſely ovate, the ſtem ones ovate with round baſes. The flowers are yellow, and open in ſmall numbers at once. The ſiliques are about three inches long, ſmooth, ſharp, and parallel or nearly ſo with the ſtalk; ſtanding in an upright manner. It is a plant which naturally grows in rough uncultivated places and in fields.

3. Root annual. Root-leaves lyrate, ſlightly hiſpid; ſtem-leaves ſmooth and even. Coroſla yellow, never white. It grows among ſummer corn, in the north of Europe; and in ſome parts of Sweden it is a common weed[d]. The only places of growth given by Hudſon are from Ray, and they belong to *B. orientalis*[e].

4. Stem a foot high, ſmooth and even, flexuoſe, branched, perennial at bottom. Leaves ſmooth, quite blunt, rather fleſhy. Calyx cloſed, ſmooth, with a double protuberance at the baſe. Borders of the petals ſpreading, obovate, emarginate, violet-coloured with red veins. Anthers yellow, ſtanding out[f]. Native of the ſouth of Europe, in moiſt fields.

5. This differs from the foregoing ſort in having a narrower ſtem; the leaves more tender and longer; thoſe next the ground on long petioles: but it differs principally in having almoſt upright, white petals, and the ſmall flower of a *Turritis*. Native of Germany and Sweden[g].

6. Root biennial. Stem ſomewhat branched, cylindrical, ſmooth, from a foot to two feet in height. Root-leaves lyrate, almoſt ſmooth, divided into deeply pinnate lobes, which are again irregularly indented or ſinuated on the edges. Stem-leaves ſmooth, glaucous, ſeſſile, ſtem-claſping, of an oblong heart-ſhaped figure, very ſlightly toothletted on the edges. Calyx yellowiſh green, ſpreading as in *Sinapis*. The ſilique has frequently three or four warty excreſcences[h].

β. The roots, when cultivated, may be eaten, but have a ſtronger taſte than the Turnep.] Under the title of Rape or Cole-ſeed, it is much cultivated in the iſle of Ely, and ſome parts of England for its ſeed, from which the Rape Oil is drawn; and for feeding cattle. [What remains after the oil is expreſſed, is called oil-cake or rape-cake. It is a very efficacious manure, and is ſold from four to ſix pounds a ton[i]. It is not this, but the lint-cake, or reſiduum of flax-ſeed, uſed in making lint-ſeed oil, that is uſed in fatting beaſts[k].

Linneus puts down *Napus ſativa* as a variety of *Napus ſylveſtris*, and Miller's *Braſſica gongylodes*, that is the *Coleſeed*, as a variety of *Braſſica oleracea*. Miller ſays that the *Coleſeed* is the *Wild Navew*, or *Napus ſylveſtris* of Caſpar Bauhin; and that it is totally different from *Garden Navew*, or *Napus ſativa*, which approaches nearer to the Turnep than the Cabbage; and is accordingly treated of by him under the article *Rapa*, and called *French Turnep*. Ray keeps them diſtinct, and affirms that the *Garden Navew* is cultivated for the roots, and the *Wild Navew* for making Rape-oil. He diſtinguiſhes the *Napobraſſica* from both theſe, making it to be a ſort of Cabbage. Theſe authors ſeem to intend by *Napus ſativa* what we call *Turnep-rooted Cabbage*, and by *Napobraſſica* the *Turnep-Cabbage*. *Coleſeed* is now commonly conſidered as the *Braſſica Napus* of Linneus; and the *Garden Navew* as a variety only of the *wild*. The ſpecific diſtinctions are very inſufficient; the confuſion of names is inextricable; and the ſpecies of this genus vary with wonderful facility.

Linneus ſays that the Navew grows wild on the ſandy ſhores of Gotland, Holland, and England. With us it is found among corn, and on ditch banks.

7. The Turnep, now ſo common in cultivation, is ſufficiently known by its round fleſhy roots. Theſe however vary exceedingly in their form, ſize, and colour, in a cultivated ſtate, in which only we are apt to view them. The leaves which ariſe immediately from the root are very large, of a full green colour, rough, and jagged or gaſhed almoſt to the midrib. From the midſt of theſe, early in the ſecond ſeaſon of its growth, ſprings a ſtalk, four or five feet high, in good ground reaching the human ſtature. The leaves on this are very different from the root-leaves; being oblong, pointed, embracing the ſtem, ſmooth and glaucous. The flowers are yellow, and placed on long, ſlender, ſmooth pedunclcs. The ſiliques or pods are cylindric; and the ſeeds are of a reddiſh brown colour, not unlike thoſe of Cabbage.

The variations of Turnep are chiefly in the root, and ariſe from the different ſoils, ſituations, and modes of cultivation.] The varieties enumerated by Mr. Miller are, 1. *The round red* or *purple-topped*. 2. *The green-topped*. 3. *The Yellow*. 4. *The black-rooted*. 5. *The early Dutch*. He allows that theſe may be varieties accidentally obtained from ſeeds, although he has ſown them ſeveral years, and has always found them to retain their differences. The *Yellow* Turnep ſeems moſt unlikely to have been an accidental variety, becauſe the roots are yellow within, whereas the others have white fleſh, notwithſtanding they are of different colours on the outſide.

β. He thinks that the *long-rooted* Turnep is a diſtinct ſpecies; the form of the root, and its manner of growth, being totally different from thoſe before enumerated. The roots are ſometimes as long as thoſe of the Parſnep, and nearly of the ſame ſhape.

[This only ſeems to have receded leſs from a ſtate of nature, wherein the root only ſwells out a little, is of a ſtringy texture, and has ſomething of acrimony in the taſte.

The general uſe of this root for the table and feeding of cattle is well known: and it has been a conſiderable improvement of light lands, particularly in the county of Norfolk, whence other counties have derived the culture.] The red-rooted Turnep was formerly more cultivated in England than at preſent; but ſince the large green-topped Turnep has been introduced, all ſkilful farmers prefer it to the others, becauſe the roots grow to a large ſize, and continue much longer good: it alſo grows above ground more than any of the others, which renders it preferable for feeding cattle; and being the ſofteſt

[b] Woodward in With. [c] Pollich. [d] Linn. [e] With. [f] Linn. [g] Ibid. [h] Linn. With. Lightf. [i] Young's Iriſh tour, 1. 507.

and ſweeteſt, even when very large, it is moſt eſteemed for the table. In very ſevere winters however this is in greater danger of ſuffering by froſt than thoſe whoſe roots lie deeper, eſpecially if the ground be not covered with ſnow; for when the roots are alternately frozen and thawed, they rot ſooner than thoſe which are more covered, and leſs tender. I have known roots of this ſort, which were more than a foot in diameter, boiled, and were as ſweet and tender as any of the ſmalleſt roots.

[Pliny among the ancients, and Tragus among the moderns, ſpeak of Turnep roots as weighing each forty pounds; Amatus of ſome amounting to fifty or ſixty; and Matthiolus of many exceeding fifty pounds, and of ſome approaching to an hundred. Yet we are told that four pounds is now reckoned an extraordinary weight for a Turnep-root in Italy, and that they uſually weigh only from a quarter to half a pound. Whether the old accounts be exaggerated, or the modern produce miſrepreſented, or the culture now neglected, I cannot aſcertain. The greateſt weight I am acquainted with in England is thirty-ſix pounds. At Stow in Gloceſterſhire a farmer produced four Turneps weighing an hundred weight; and offered to produce, from a ſmall given ſpace, eighty Turneps which ſhould weigh a ton.]

The next in goodneſs to the green-topped is the red or purple-topped Turnep, which will alſo grow large, and be extremely good for ſome time; but the roots will become ſtringy much ſooner than the others. The long-rooted, the yellow, and the black-rooted Turneps are now rarely cultivated, except for the ſake of variety, none of them being ſo good for the table or for feed as the red and green-topped ſorts.

The early Dutch Turnep is chiefly ſown in the ſpring, to ſupply the table before the others can be procured; and when drawn off young, this ſort is tolerably good; but if the roots be left to grow large, they become ſtringy, rank, and unfit for uſe.

The French Turnep is not much cultivated in England; but in France and Holland it is in great eſteem, eſpecially for ſoups; in which, being ſmall, the roots are boiled whole: they muſt be uſed whilſt they are young, otherwiſe they are rank and ſtringy.

[Turnep-roots are reputed to relax the bowels, and to ſweeten the blood: to be hurtful to pregnant and hyſterical women, and to all who are ſubject to flatulencies. The juice well fermented affords by diſtillation an ardent ſpirit. The rind is acrimonious[a]. The tender tops boiled are frequently eaten in the ſpring as greens with meat.]

It is not many years ſince the practice of ſowing Turneps for feeding cattle, has been of general uſe; how it happened that this improvement ſhould have been ſo long neglected in every part of Europe is not eaſy to determine; ſince it is very plain, that this piece of huſbandry was known to the ancients. For Columella, in treating of the ſeveral kinds of vegetables which are proper for the field, recommends the cultivating *Rapa* in plenty; becauſe, ſays he, thoſe roots which are not wanted for the table, will be eaten by the cattle. Yet Turneps have not been generally cultivated in the fields till lately; nor is the true method of treating them practiſed even now in ſome diſtant counties.

[Whatever ſkill the ancients might poſſeſs in the culture of Turneps, it cannot be a matter of ſurpriſe if it were neglected in the confuſion conſequent upon the fall of the Roman empire. It is however certain that it was practiſed as far back as we have any records in the Low Countries, and in ſome parts of Germany. This moſt uſeful root indeed does not ſeem to have found its way into England, for the purpoſe of feeding cattle, till about the middle of the laſt century. Sir Richard Weſton, in his *Diſcourſe of Huſbandrie uſed in Brabant and Flanders*, 1645, affirms that Turneps were then cultivated for feeding kine in many parts of England. He adds however, that "there is as much difference between what

[a] Withering.



"groweth in Flanders and here, as is between the "ſame thing which groweth in a garden, and that "which groweth wild in the fields." Mr. Worlidge, who writ in 1668, ſays that flies are the greateſt enemies to Turneps[b]. And Mr. Ray, in 1686, informs us, that they are ſown every where in fields as well as gardens, for the ſake of their roots, in England as well as in foreign countries[c]. Mr. Liſle alſo mentions the growth of Turneps in Hampſhire, Berkſhire, and Leiceſterſhire, in the years 1698 and 1699: and ſays that the Newtown men who hoed his Turneps in 1707, had made this their buſineſs for many years[d]. Laſtly, Mortimer at the beginning of the preſent century, ſays, that Turneps are of a very great advantage to be ſown in fields, as food for cattle in winter. He adds, that in Suffolk they commonly give them to their cattle in the houſe, and that hogs will alſo eat them, if they are firſt boiled[e]. Hence the common ſtory that the culture of Turneps was firſt introduced by Charles Lord Viſcount Townſhend cannot be true; nor did he lead the way even in Norfolk itſelf: for Mr. Liſle, whoſe obſervations in agriculture were made between the years 1693 and 1722, informs us, that he was aſſured by Mr. Heron of Norfolk, that they dung their turnep-land ſo much, that their dry-land meadows are quite impoveriſhed by it. That he diſcourſed alſo with Mr. Gooch, a Norfolk gentleman, about the turnep-huſbandry of that county; particularly on a diſtemper to which the root is ſubject called the *baubery*[f]. The truly patriotic nobleman however abovementioned was probably the occaſion of this culture being carried to that extent and perfection in which we now ſee it; and that moſt likely about the year 1730, when his Lordſhip retired to Rainham from public buſineſs; or perhaps earlier, for he was ambaſſador extraordinary to the States General in 1709, when he might have become acquainted with the Turnep culture on the Continent[g].

The improvement in this piece of huſbandry was undoubtedly gradual. The culture was practiſed in the middle of the laſt century, but was not well underſtood till the end of that and the beginning of this: nor did it arrive at its preſent perfection till it was encouraged by the precept and example of the late Lord Viſcount Townſhend.

Turneps were certainly not in cultivation, except for the table, at the end of the ſixteenth, and the beginning of the laſt century. Barnabe Googe indeed ſays (1586), "we uſe to ſowe Rapes for the "ſuſtenance both of man and beaſt." But we are to recollect that his work is a tranſlation from the German[h], and the above paſſage refers to that country. So little was known of them in 1588, that Cogan, in his Haven of Health, affirms, "that "although many men love to eate Turneps, yet "ſwine by nature doe abhorre them[i]." Neither Gerard in 1597, nor Parkinſon in 1629, give the ſmalleſt hint of this root being then in field-culture for cattle. The former of theſe ſays only that "the "ſmall Turnep groweth by a village near London, "called Hackeney, in a ſandie ground, and brought "to the Croſſe in Cheapſide by the women of that "village to be ſolde, and are the beſt that I have "ever taſted[k]."

8. The Cabbage, as it is found in its wild ſtate on the ſea ſhores of Britain, has the ſtem leaves very much waved, and variouſly indented, the colour ſea-green frequently with a mixture of purple; the lower ones ſomewhat ovate and ſeſſile, the upper almoſt linear. The flowers are large. The leaflets of the calyx ovate, broad and yellow. The ſiliquæ ſhort and ſwelling[l].

Early in the ſpring, the Sea Cabbage is preferable to the cultivated ſorts; but when it is gathered on the coaſt, it muſt be boiled in two waters, to take away the ſaltneſs. When old it is ſaid to occaſion

[b] p. 26. [c] hiſt. p. 800. [d] 233—238. [e] p. 122. edit. 2. 1708. [f] p 233 & 239. [g] Young's annals, 5. 120. [h] Of Conrad Heresbach, p. 59. [i] p. 64. [k] Herball, p. 178. [l] Woodw. in With.

giddineſs. The roots may alſo be eaten, but they are not ſo tender as thoſe of the Turnep and Navew. All the different varieties of Garden Cabbage originate from this *.

Theſe varieties may, it ſhould ſeem, be reduced to three general diviſions: the firſt comprehending thoſe which grow in the natural way, without forming the leaves or ſtalks into a head. This ſection or diviſion, beſides the Sea Cabbage or Wild Colewort, would comprehend the Green Colewort, the Borecoles, and Turnep Cabbage. Secondly, thoſe which form the leaves into a head, as the White Cabbage, the Red, the Savoy, *&c.* Thirdly, thoſe which form their ſtalks into a head, as the Cauliflower, and the different varieties of Broccoli. The firſt ſection might be ſubdivided into the Wild, with broad leaves, and an even ſtem; the Turnep Cabbage, with broad leaves and a protuberant ſtem; and the Borecoles, with fine-cut leaves and an even ſtem. The ſecond ſection contains the Cabbages commonly ſo called: as the Red; the numerous varieties of the White, ſuch as the Sugar-loaf, the Early, the foreign Muſk, the ſmall Ruſſia, the large-ſided, the flat-topped, the Yorkſhire, Scotch, American, *&c. &c.*; and thoſe with wrinkled leaves, as the common Savoy, the green Savoy, *&c.* Of the Borecoles in the firſt, and the Broccoli in the third ſection, there are alſo variations in colour—the purple and the white.

Mr. Miller ſeems to confound the *Napobraſſica* or Turnep Cabbage with the Sea Cabbage: he ſays] it grows naturally on the ſea ſhore, near Dover; that it has a perennial branching ſtalk, in which it differs from all the others; that the leaves are inclining to a purple colour, and are placed alternately on the branches; that the flower-ſtalks grow from the ends of the branches, and ſpread out horizontally, but that thoſe which ariſe from the centre of the plant grow erect, and ſeldom put out branches. He inſiſts that it is a diſtinct ſpecies, having always found the ſeeds to produce the ſame plant, with this difference only, that in good ground the ſtalks will be much larger than in poor land. The young ſhoots, after they are much frozen, are very ſweet and good; but at other times they are very ſtrong and ſtringy. In very hard winters, this is a neceſſary plant, for the moſt ſevere froſts do not injure it.

The common Colewort, or Dorſetſhire Kale is now almoſt loſt near London, where the markets are uſually ſupplied with Cabbage plants inſtead of them; theſe being more tender and delicate. The common Colewort indeed is better able to reſiſt the cold in ſevere winters; but it is not good till it has been pinched by froſt, and our winters being generally temperate, Cabbage plants are now conſtantly brought to market; which, if they be of the Sugar-loaf kind, are the ſweeteſt greens from december to april yet known. Indeed, where farmers ſow Coleworts to feed their milch cattle in the ſpring, when there is a ſcarcity of herbage, the common Colewort is to be preferred, as being ſo very hardy that no froſt will deſtroy it.

The curled Coleworts or Borecoles are more generally eſteemed than the common one, being like that ſo hardy as never to be injured by cold, and at the ſame time much more tender and delicate; theſe however are always ſweeter in ſevere winters than in mild ſeaſons.

Of the heading Cabbages, the Red is chiefly cultivated for pickling; the common white, flat, long-ſided, and Savoy for winter uſe. The Muſk Cabbage is almoſt loſt, though for eating it is one of the beſt we have; but being tenderer than many other ſorts, it is not ſo profitable for market gardeners ſuch however as cultivate for their own tables ſhould make choice of this rather than any of the common Cabbages, for it is always looſer, the leaves are more criſp and tender, and it has a moſt agreeable muſky ſcent when cut.

The Early and Sugar-loaf Cabbages are generally ſown for ſummer uſe, and are commonly called Michaelmas Cabbages. The Ruſſian Cabbage was formerly in much greater eſteem than at preſent, it being now only to be found in particular gentlemen's gardens, and rarely brought to market. [The other heading Cabbages, together with many others, for it would be endleſs to enumerate all the varieties which are perpetually riſing into fame, and falling into oblivion, are cultivated chiefly for feeding cattle: for which they are certainly well adapted on ſtrong lands; but they are undoubtedly a very exhauſting crop.

When the Cabbage was firſt introduced into field culture, I am not enabled, from my reſearches, to ſtate; but it has not long prevailed to any conſiderable extent. Mr. Houghton, in his Collections †, relates, that a beaſt was lately (1694) ſold near Bury for thirty pounds, which was fatted with Cabbage leaves.

For the table it has been uſed time immemorial; having been in ſo much favour with the Romans, it could hardly fail of being introduced by them; during their reſidence in our iſland. And our Saxon anceſtors certainly had ſome ſort of Cabbage, ſince they called the month of february *Sprout-cale* ‡.

The Germans cut Cabbages in pieces, and with ſome aromatic herbs and ſalt, preſs them cloſe in a tub, where they ſoon ferment, and are then eaten under the name of *Sour Crout* §. In this ſtate they are much recommended againſt the ſea ſcurvy. Cabbages indeed in general are eſteemed a ſalubrious aliment in the putrid ſcurvy: they are laxative and produce flatulencies; but the laxative matter is extracted by long boiling. The white Cabbage is the moſt putreſcible, and the red moſt emollient ‖.]

Mr. Miller inſiſts that the Cauliflower is ſpecifically diſtinct from the common Cabbage; becauſe, from more than fifty years experience in cultivating theſe plants, he could never find the leaſt appearance of one approaching to the other: becauſe they are ſo different in their leaves, as to be eaſily diſtinguiſhed when the plants are young: and becauſe the common Cabbage puts out one upright ſtem from the centre, which afterwards divides into ſeveral branches; whereas the Cauliflower ſends out many flower-ſtems from the part which is eaten, which is a compact collection of the heads of theſe ſtalks, dividing afterwards into ſo many ſtems, and branching out into amply ſpreading ſhoots, ſo as to form a large ſpreading head when in flower, but never riſing pyramidically like the Cabbage.

The Cauliflower was firſt brought to England from the iſland of Cyprus, where it is in great perfection at preſent; but it is ſuppoſed, it was originally brought thither from ſome other country: moſt of the old writers mention it to have been brought from that iſland, to the different parts of Europe. Although this plant was cultivated in a few Engliſh gardens long ſince, yet it was not brought to any degree of perfection till about the year 1680, at leaſt not to be ſold in the markets. Since the year 1700 the Cauliflower has been ſo much improved in England, that ſuch plants as before would have been greatly admired, are at preſent little regarded. It has indeed been much more improved in England than in any other parts of Europe. In France they rarely have Cauliflowers till near Michaelmas; and Holland is generally ſupplied with them from England. In many parts of Germany they were not cultivated till within a few years paſt; and moſt parts of Europe are ſupplied with ſeeds from hence.

Purple and White Broccoli are only varieties of the Cauliflower; for although with care they may be kept diſtinct, yet if they were to ſtand near each other for ſeed, they would probably intermix. I am the rather inclined to believe this, from the various changes which I have obſerved in theſe plants; for I have frequently had Cauliflowers of a green colour, with buds regularly formed at the ends of the ſhoots, like thoſe of Broccoli, though the colour

* St. in With.

* Vol. 1. p. 294. † White's Selborne. ‡ St. in With. § Lewis.

was different; and the white Broccoli approaches ſo near to the Cauliflower, as to be with difficulty diſtinguiſhed from it. When however theſe are cultivated with care, they may be kept diſtinct. The variations are not occaſioned by ſoil, but by the mixture of the farina of the anthers in the flowers; thoſe perſons therefore who are curious to preſerve them diſtinct, never ſuffer the different ſorts to ſtand near each other for ſeed.

9. Leaves oblong or oval, very like thoſe of Hound's-tongue, blunt but ſmooth; ſtem-leaves embracing, oblong, quite entire. Flowers as in the common Cabbage, yellow. Calyx longer than the claws of the petals, whence it gapes and is prominent between them. Stamens longer. Siliques a little compreſſed. Native of China[a].

Introduced in 1770, by Monſ. Richard[f].]

10. This is an annual plant, which, if ſown in april, will flower in july, and perfect the ſeeds in october. It never cloſes the leaves to form a head, but grows open and looſe, more like the wild Navew. This ſort came from China, where it is cultivated as an eſculent plant. There are two or three varieties of it, and it is as changeable as our common Cabbage: [of which indeed, or perhaps of the Navew, it ſeems to be a variety.

11. This ſpecies is a native of Siberia, and is an annual plant. The root is thin and fibroſe. The ſtems numerous, growing oblique, two feet or more in length, ſmooth, and branching upwards. The leaves are of diſſimilar forms, but in general are linear-lanceolate, thick, and alternate; thoſe on the ſtalk generally dentated: the denticles nearly ſubulate. The ſhoots are leafy, proceeding from the axillas of the branches, ſo as to cauſe a kind of cluſtering appearance. The flowers are pale-yellow. It is a plant which varies extremely in the appearance of its leaves.

12. Root annual, fuſiform. Stems many, from a foot to eighteen inches high and more, round, ſmooth, ſometimes having a few hairs and ſmall red dots, bright or glaucous green: branches alternate. The root-leaves form a tuft, proſtrate on the ground: ſtem-leaves alternate, one to each branch, ſubdecurrent, from upright ſpreading, lanceolate, obtuſe, pinnatifid, above ſix inches long and two broad, bright green or glaucous, ſmooth, frequently having a few hairs; pinnæ alternate and oppoſite, decurrent, linear-lanceolate, obtuſely toothletted, the outmoſt leaflet trifid: petioles furrowed above, ſometimes an inch long: rib ſmooth, often with a few hairs. Flowers in a long, looſe, terminating raceme. Peduncles alternate, round, ſmooth, one-flowered. Corollas yellow, with dark yellow and green veins. Siliques ſpreading, obtuſely quadrangular[b]. Native of the ſouthern countries of Europe, in ſandy fields, by way ſides, and on walls; flowering from june to auguſt.

13. Root annual. Stem angular, upright, branching, two feet high and more. Leaves ſmooth, pulpy, with a leafy nerve and three or four pairs of pinnas, larger as they approach the nerve, confluent, oblong, acute, toothed; the outer largeſt, ovate or rhomboidal, often ſemibifid and ſemitrifid. Calyx erect, livid, with the leaflets, eſpecially two of them, gibbous. Claw of the petals erect, long: border broad, roundiſh, lemon-colour with black veins, ſometimes white. Siliques on ſhort peduncles, preſſed to the ſtem, ſubhirſute, round, with four lines, two of which are a little elevated; and terminated by a thick ſtrong triangular horn, which is the ſtyle. Seeds round on one ſide, and flat on the other[i].

Native of Switzerland, Auſtria, and Piedmont.] It was formerly much cultivated in the gardens as a ſalad herb, but at preſent is little known, having been long rejected on account of its ſtrong ungrateful ſmell. It alſo ſtood in the liſt of medicinal plants, but is now ſeldom uſed, though it is reckoned a ſtrong diuretic.

[14. Root annual, ſpindle-ſhaped. Leaves lanceolate, pinnatifid-toothed, ſmooth above. Stem hairy, branching. Racemes erect, terminating. Corollas yellow, with darker veins. Calyx cylindrical; but in the fruit it becomes inflated and permanent. The belly of the ſilique is not longer than the calyx, with the lanceolate piſtil permanent. It differs therefore from the foregoing, in having a calyx under the fruit, inflated like a bladder; leaves not lyrate but lanceolate; ſiliques hiſpid backward, not ſmooth; calyxes permanent till the fruit is ripe, not deciduous[k]. Native of Spain and Aleppo, whence it was ſent to Moriſon by Robert Huntingdon.

15. Root perennial, ſomewhat woody, penetrating deep into walls. Stem a foot and half high, branched, round, at bottom ſomewhat woody and perennial. Leaves pinnatifid and jagged, ſmooth, ſpreading, having a diſagreeable ſmell. The calyx, before the flower opens, has two ſhort proceſſes like horns, furniſhed with one or two hairs. Petals rather large, twice the length of the calyx, yellow. The two glands on the outſide of the filaments are unuſually long, externally bent in at the top: the other two ſhorter and roundiſh. Silique an inch and half long, round, marked on each ſide with a prominent line[l].

It grows on old buildings and walls in many parts of England, as at Yarmouth, Cheſter, Taunton caſtle, Lichfield cloſe, Briſtol, Exeter, Berwick, and plentifully in and about London, as about the Tower, the back of Bethlem hoſpital, about Dean's-yard, Weſtminſter, Hyde Park, Chelſea, &c. flowering the greateſt part of the ſummer.

16. Root woody, perennial. Root-leaves elliptic, obtuſe, obſcurely ſinuate-angular; petiole channelled, the length of the leaves. Stem round, ſtriated, hollow, a cubit and half high, ſimple or a little branched. Stem-leaves few, diſtant, like the others, but on ſhorter petioles, and ſcarcely angular. Flowers in umbels: petals ovate, yellow, ſcarcely emarginate; veins darker. Siliques toruloſe, ſubquadrangular, drawn to a point at both ends. The whole plant is very ſmooth, tender, juicy, and glaucous. Native of the ſouth of France, and the mountains of Piedmont[m].]

PROPAGATION AND CULTURE.

1—5. The five firſt ſpecies are cultivated merely for curioſity. They may be propagated by ſowing their ſeeds on a bed of light earth, early in the ſpring, in the place where they are deſigned to remain, for they do not bear tranſplanting well. When the plants are come up pretty ſtrong, they ſhould be thinned, ſo as to leave them four or five inches apart, and they muſt be conſtantly kept clear from weeds. In june they will flower, and their ſeeds will ripen the beginning of auguſt. If theſe be permitted to fall, the plants will come up, and maintain themſelves without any farther care except weeding.

COLESEED, or RAPE.

The Cole ſeed when cultivated for feeding cattle, ſhould be ſown about the middle of june. The ground for this ſhould be prepared in the ſame manner as for Turneps. The quantity of ſeeds for an acre of land, is from ſix to eight pounds, and as the price of the ſeeds is not great, it is better to allow eight pounds; for if the plants are too cloſe in any part, they may be eaſily thinned when the ground is hoed. When the plants have put out ſix leaves, they will be fit to hoe, which muſt be performed in the ſame manner as is practiſed for Turneps, with this difference only, of leaving theſe much nearer together; for as they have fibrous roots and ſlender ſtalks, they do not require near ſo much room. Theſe plants ſhould have a ſecond hoeing, about five or ſix weeks after the firſt, which, if well performed in dry weather, will entirely deſtroy the weeds, and they will require no farther culture. By the middle of november theſe will be grown

[a] Linnæus. [f] Hort. kew. [b] Pollich. [i] Haller. [k] Linn. [l] Gerrit. [m] Allioni.

large enough for feeding, when if there is a ſcarcity of fodder, this may be either cut or fed down; but where there is not an immediate want of food, it had better be kept as a reſerve for hard weather, or ſpring feed, when there may be a ſcarcity of other green food. If the heads are cut off, and the ſtalks left in the ground, they will ſhoot again early in the ſpring, and produce a good ſecond crop in april, which may be either fed off, or permitted to run to ſeed, as is the practice where this is cultivated for the ſeeds: but if the firſt is fed down, there ſhould be care taken that the cattle do not deſtroy their ſtems, or pull them out of the ground. As this plant is ſo hardy as not to be deſtroyed by froſt, it is of great ſervice in hard winters for feeding ewes; for when the ground is ſo hard frozen, as that Turneps cannot be taken up, theſe plants may be cut off for a conſtant ſupply. In ſeveral places where I have ſown this ſeed, I have found that one acre of land will produce as much food, as almoſt two acres of Turneps; and this will afford late food after the Turneps are run to ſeed; and if it is afterward permitted to ſtand for ſeed, one acre will produce as much as, at a moderate computation, will ſell for five pounds, clear of charges.

Partridges, pheaſants, turkeys, and moſt other fowl, are very fond of this plant; ſo that wherever it is cultivated, if there are any birds in the neighbourhood, they will conſtantly lie among theſe plants.

The ſeeds of this plant are ſown in gardens for winter and ſpring ſalads, this being one of the ſmall ſalad-herbs.

[Cole or Rape is ſometimes ſown on fallow, like Turneps, ſometimes on the ſtubble of an arable crop; it requires good land, very ſtiff clay does not ſuit it, and poor land is wholly unfit: but on the ſward of old grazing grounds, on fen and marſh land, it generally turns out the moſt profitable crop for ſeed, either immediately or after flax. On old paſtures the turf is pared and burnt, the aſhes are ſpread, generally with a mixture of lime. The ſeed is ſown in july, early enough to get a ſtrong leaf, and late enough to prevent its running up to ſtem the firſt autumn; the quantity of one gallon to an acre, generally on one plowing, and bruſhed in with a thorn-harrow. The crop is ſeldom hoed or weeded. The vacant patches are filled up in october with plants from thoſe parts which are overſtocked: this work is done by women, the plants ſeldom fail, but they ripen later than the others. When a large piece fails, the plough is ſometimes uſed in tranſplanting: the expenſe four ſhillings an acre; namely eight women, at ſix-pence a day. Would it not therefore be better to tranſplant the whole crop?

In the common method of culture, the whole tribe of biennial weeds have time to eſtabliſh themſelves before winter; and the crop not being reaped until july or auguſt following, they have time to mature and ſhed their ſeed. The graſſes and ſtrong-rooted weeds of every kind, gain poſſeſſion of the ſoil; which alſo gets out of tilth, by lying ſo long without ploughing.

One ploughing in autumn would extirpate the biennial weeds, check the graſſes and ſtrong-rooted weeds, and preſerve the ſoil in tillage. Draw from the firſt land ſufficient plants for the laſt land, and bury the roots in a vacant place until wanted. Plough the firſt land, burying the weeds and the refuſe rape; and ſtock it at the ſame time with plants, drawn from the ſecond land. The firſt land being finiſhed, ſupply the ſecond with plants from the third, and ſo on; furniſhing the laſt land with the plants in reſerve. Thus the entire piece would have prime plants, equal in ſtrength, and regular in diſtance; the ſoil would be evenly occupied, and the crop would ripen equally; the hoe, and even the horſe-hoe might be uſed between the rows; and the fouleſt crop which farmers have to deal with, might, at a ſmall expenſe, be rendered a fallow crop of the firſt eſtimation.

In this management, the firſt or ſeed-ploughing ought to be very ſhallow acroſs the ridges; and the ſecond or tranſplanting ploughing ſhould be acroſs the firſt; gathering up the ridges dry againſt winter. A manured fallow, a rich wheat ſtubble, or other land ſufficiently clean and in heart, might be planted in a ſimilar manner; raiſing plants for this purpoſe in a detached ſeed-bed.

Rape is generally ripe in july, and is conſidered as fit for cutting when the forwardeſt of the ſeed has begun to turn black. It is cut with ſickles, and laid in broad thin reaps upon the tops of the ſtubble, which is generally cut about a foot high, or as high as the lower branches will allow. It lies until the ſap is pretty well dried out of the greeneſt pods, and the ripeſt are ready to open; and is commonly thraſhed in the field upon a cloth. It would be far better however to bind, ſhock, and carry it into the barn; threſhing it when markets and convenicency required[a].

When Rape ſucceeds flax, the ground is cleared of weeds as ſoon as convenient; the ground is ploughed four or five inches deep, and from half a peck to a peck of ſeed, according to the richneſs of the ſoil, is ſown from a week before to a week after michaelmas; it is uſually well harrowed in, and if it grows into rough leaf before winter it is conſidered as better than growing more, which would render it in danger of being damaged or deſtroyed by froſt: no weeding takes place, and the crop will be ripe about the middle of july. It is reaped and laid on the ground in ſingle handfuls, and when dry it is carried to the threſhing-floor on ſledges covered with ſail-cloth. The crop is from three to ſeven quarters on an acre. The ſeed loſt in reaping and getting produces a crop of green food for ſheep, which is fed off early enough to prepare the ground for a ſecond crop of flax. The ſtraw is ſold at two ſhillings an acre, to perſons who burn it on the ſpot for the aſhes[b].

For immediate profit, and on old paſtures broken up, Rape or Cole may be thus cultivated for ſeed; but on ſtubbles or fallows it anſwers better to feed it off with ſheep; the fat ones going over it firſt, and afterwards the lean or ſtore ſheep following: in the autumn, but particularly in the ſpring, when there is frequently a ſcarcity of green feed. This is an excellent preparation either for Wheat or Barley. It ſucceeds beſt on a deep ſoil, with good manure and deep ploughing; and does beſt after Beans, Barley, Oats, or Wheat. It is ſometimes ſown after Turneps or Cabbages, which cannot be a right practice. When ſown on a fallow the land ſhould be ploughed up ſoon after chriſtmas, and lie till the end of march. It ſhould then be ploughed a ſecond time, harrowed down, and a coat of manure laid on as for Turneps. When this is ſpread, the land ſhould be croſs-ploughed and got into fine tilth by the end of june. The firſt rain after this, the ſeed ſhould be ſown; from two to four quarts an acre according to circumſtances, in the ſame manner with Turneps; and the land ſhould be lightly harrowed and rolled. The crop ſhould be hoed, as above directed; and the vacant places filled up in october. Many perſons omit the hoeing entirely, when it is intended only for feeding. Coleſeed being an exhauſter of land, ſhould not be repeated oftener than every ſeventh year, and not ſo often when cultivated for the ſeed.]

## TURNEP.

### *Soil.*

The Turnep delights in a light, ſandy, loamy ſoil: in a rich ſoil the roots grow rank and are ſticky; but if it be moiſt, they will thrive better in ſummer, eſpecially in freſh land, where they are always ſweeter than upon an old worn out, or a rich ſoil.

[The right ſoil for this root, in field culture, is a deep ſand, ſuch as has adheſion enough to make it of the value of from 5s. to 10s. an acre. Land

[a] Marſhall's Yorkſhire, 2. 29, &c.
[b] Middleton, in Young's ann. vol. 24. p. 94.

of 14s. or 15s. has generally too great a mixture of loam. If the land be wet or ſtiff, ſuch as yields good wheat crops, the culture may not be advantageous, eſpecially if uſed, as it ſhould be, as a preparation for Barley: on ſuch ſoil it would ſhorten the crop, at leaſt two or three combs (from eight to twelve buſhels) an acre. Even blowing ſands of 3s. 6d. or 2s. 6d. an acre are to be preferred; for theſe, when folded, if the ſeaſon ſhould happen to be wet, yield profitable crops: indeed ſuch lands can be farmed no other way; for if no Turneps are gained, no Corn can be had; and a mere ſheep-walk is then the only uſe that can be made of them. Where a farmer has no proper ſoil for Turneps, it is more prudent to give up the winter feeding of more cattle than his hay and ſtraw will do for, unleſs he can depend on buying Turneps, which may ſometimes be advantageous, and ſometimes the contrary [p].

*Tillage.*

The firſt earth (or ploughing) for Turneps ſhould be given before chriſtmas, or certainly not later, and ſhould be of a common ſtaple depth [q]; unleſs the land is foul, in which caſe it ſhould be ploughed very fleet (ſhallow) in two furrow ridges, and the ſecond time to the full depth; but it ſhould never be ploughed in wet weather [r]. This ſecond earth, for which frequently the farmer has not leiſure, ſhould be given before the ſpring ſeed-time, and will be very uſeful; for if there ſhould be any ſpire or ſpear-graſs (quick, quich or couch) in the land, that pernicious weed is apt to get too great a hold before barley-ſowing is over. Immediately after the Barley is in the ground, the third earth ſhould be given, this will be in may; the fourth about the ſecond week in june; and the fifth, or ſeed-earth the latter end of the ſame month, unleſs the *ſoil* be ſubject to the mildew, in which caſe old midſummer (the firſt week in july) will be full ſoon enough. And let it be obſerved, that harrowing with every earth is very neceſſary, for the ſurface ſhould always be kept in fine friable order, that the ſeed-weeds may grow; whereas, if this be omitted till the ſeed-earth, they will then be grown ſo powerful, as to ſmother many of the young plants [s].

On a light dry ſoil, the Turnep crop is in a degree neceſſary; but where land will remain in graſs, and where other arable crops are more certain and productive, it is leſs eſſential to good huſbandry: in particular ſituations however, under proper management, it may frequently be uſeful, and may be occaſionally practiſed, on a ſmall ſcale, in almoſt every ſituation. It may not be amiſs therefore to give the proper tillage of the turnep-crop on rich retentive ſoils.

If the land be foul, or if early ſowing be propoſed, break up in autumn, by a ricebalk or half-ploughing, acroſs the lands; gathering a bout in each interfurrow, and opening the croſs trenches, in order to lay the ſoil as dry as poſſible during the winter. But if the land be tolerably clean, and early ſowing be not wanted, break up in the ſpring; in order that the roots and ſtems of graſſes, *&c.* may remain in an undigeſted ſtate, and aſſiſt in rendering a cloſely textured ſoil looſe and fit to receive the weakly fibres of the ſeedling Turneps.—Croſs, and give the firſt ſtirring (the third ploughing) without previous harrowing: and, if the root-weeds be not yet ſubdued, give a fourth ploughing, before the harrows be ſuffered to come upon the land.

Spread dung, which is in a middle ſtate, on the rough plit: if too long and ſtrawy, it is pulled up by the harrows, and if wholly digeſted, it loſes the valuable quality of rendering this retentive ſoil looſe and open. As the dung is ſpread harrow and roll, until the ſurface be perfectly reduced; and in this ſtate let it lie until the ſeed-weeds have vegetated.

Turn under the weeds and manure, by a mean-depth or ſomewhat ſhallow ploughing; and if the ſoil be in a proper ſtate, and the ſeaſon of ſowing be arrived, ſow on this ploughing: if not, harrow and roll, letting another crop of ſeed-weeds ſpend themſelves; remembering that the ſtronger the ſeed-weeds are before they are ploughed under, the fitter the ſoil will be for the reception of the ſeedling Turneps, eſpecially if it be of a tenacious quality.

Harrow immediately the plit of the ſeed ploughing with rough harrows, in order to give a uniform looſeneſs to the ſurface, as well as that the ſeed may be buried at a uniform depth. Sow, and immediately cover with one full tine of a pair of light harrows; and, if poſſible, with the horſes trotting.

For a crop to be eaten off in autumn, ſow in june, the *tankard* or *pudding* Turnep, which has a rapid growth, but ſtanding high above the ground, cannot bear the winter. For winter and ſpring feed, ſow the common *white-loaf*, in july. If theſe miſcarry, or if ſtubble Turneps be attempted, ſow in auguſt, the *ſtone* Turnep, a ſmall hard, ſweet root, which ſtands the winter with ſingular hardineſs.

In a common ſeaſon, ſow two pounds of ſeed on an acre, all upon the ſame ſurface; for perhaps the nearer the plants come up, the leſs danger there is of their being wholly cut off by inſects; but if theſe are known to be in force, or if any doubt ariſe, either as to the quality of the ſeed or the ſeaſon, ſow at leaſt three pounds of ſeed to an acre.

If the ſoil lie in broad round lands, plough one, two, or even three bouts in each interfurrow, according to the width, height and wetneſs of the lands, as ſoon as the ſeed-weeds have done vegetating; and if any root-weeds appear to be alive on the ſurface, or being dead, if any are likely to impede the hoe, pick them off, and caſt them upon the intervals.

If the firſt ſowing miſcarry, and the failure be fully aſcertained before the weeds have got too ſtrong to be got out with rough harrows, harrow only before re-ſowing; but if the weeds have got faſt hold of the ſoil, or if the ſeaſon be too moiſt to obtain the intention by harrowing alone, plough a mean-depth, and harrow, ſow, and cover as before [t].

On ſuch ſoils the Turneps cannot be fed on the land without injury, even by ſheep; nor can they well be carted off, except in light broad-wheeled carts or on ſledges: they may however be uſeful in ſtall-feeding bullocks, or given to ſheep on a ſound piece of paſture.

*Drilling.*

Another method has been practiſed lately in cultivating Turneps; which is, by ſowing the ſeed in rows with the drill plough. In ſome places the rows have been ſown three feet aſunder, in others four, in ſome five, and ſome ſix. The latter has been commended by ſkilful perſons as the moſt proper diſtance; for although the intervals are ſo large, yet the crop produced on an acre has been much greater than upon the ſame quantity of land where the rows have been but half this diſtance; and upon all the fields which have been cultivated for Turneps, the crops have greatly exceeded thoſe which have been hand-hoed. The late Lord Viſcount Townſhend was at the expenſe of making the trial of theſe two different methods of huſbandry, with the greateſt care, by equally dividing the ſame fields into different lands, which were alternately ſown in drills and broad-caſt. The latter were hoed by hand, in the common method, and the other cultivated by the hoeing plough; and when the roots were fully grown, his Lordſhip had an equal quantity of land, which had been ſown in different methods, meaſured, and the roots drawn up and weighed; and thoſe roots which had been cultivated by the plough, were ſo much larger than the other, that the crop of one acre, weighed a ton and a half more than that of an acre in the other huſbandry.

But when the Turneps are ſown in drills, they will require to be hoed by hand, to ſeparate and cut out

[p] Macro, in Young's ann. vol. 3. p. 298.
[q] Ibid.
[r] Kent's report for Norfolk.
[s] Macro.
[t] Marſhall's midland, 2. 192, &c.

the plants where they are too near together in the rows, as alſo to cut up the weeds between the plants, where the plough cannot reach them. If this is carefully performed, the ploughing of the intervals will encourage the growth of the roots, by thus ſtirring the ground, and prepare it much better for the crop of Barley, or whatever elſe is ſown the following ſpring. This method of culture may be ſuppoſed to be more expenſive than that commonly practiſed, by thoſe unacquainted with it; but thoſe who have made trials of both, find the horſe-hoeing to be much the cheapeſt, and by far the beſt. For the country people, who are employed in hand-hoeing Turneps, are very apt to hurry over their work, ſo that half the weeds are left growing, and the plants are ſeldom ſingled out ſo well as they ſhould be; nor are they curious enough to diſtinguiſh the Charlock (which is one of the moſt common weeds in arable land) from the Turneps; ſo that about the middle of ſeptember, it is very common to ſee the fields of Turneps full of the yellow flowers of the Charlock. Now, in the horſe-hoeing, all the weeds in the intervals will be entirely deſtroyed; or if a few plants of Charlock in the rows ſhould be overlooked, they may be eaſily drawn out afterwards: and by this method the land will be ſooner and better cleaned from weeds.

[The above advantages of drilling Turneps have been confirmed by ſubſequent obſervations and experiments. The ſpaces between the rows will be hoed in half the time that would be required if they were ſown in the common way: and when they come to be ſet out at proper diſtances in the rows, the ſuperfluous plants may be cut out in one-third of the time uſually required, and that by women and children; which is a conſiderable advantage, when the hoeing is to be done in the buſy time of harveſt [z]. It is not the practice, nor does it ſeem to be any advantage, to ſet out the rows at ſo great a diſtance as is recommended by Mr. Miller; the common intervals between the rows are from ſeven or eight to ten or twelve inches.

The difference in weight on a given quantity of land appears alſo to be conſiderable, to the advantage of the drill culture, to the amount of one ton, three, four, or twelve hundreds; two tons five hundred; and even three tons [a]. But the principal advantage ſeems to conſiſt in depoſiting the ſeed at a proper depth in the ſoil, namely about two inches, where there is moiſture even in a dry ſeaſon to ſend the plants up in a few days; whereas when they are ſown broad-caſt in a time of drought, the ſeed may remain ſeveral weeks waiting for rain to make them vegetate; and the ſeed being all depoſited at the ſame depth will vegetate at the ſame time; and by getting into the rough leaf ſooner, will ſtand a better chance of eſcaping the fly [b].

*Manuring.*

No Turneps, and conſequently no Barley after them, can be had without dung; and the crop in great meaſure depends upon the quantity of it. The dependance for manure is chiefly on the ſold or farm-yard, uſually both. Of farm-yard dung, or elſe muck, that is, dung mixed with mould, marl, *&c.*, not leſs than twelve loads ſhould be ſpread on an acre, ſuch as was made the preceding winter, and once turned over. In reſpect to the length of dung, it ſhould neither be long, nor quite rotten; the beſt condition is, when it is in ſuch a ſtate that the labourers ſay it will neither ſpit nor fork. When the dung is rather long, and ploughed in with the ſeed-earth, the ſeed ſhould be only rolled in [c].

It is the cuſtom with ſome farmers to turn in the dung very ſhallow at the laſt ploughing but one, harrowing well to mix it with the ſoil; and they think it will begin to ferment by the time the ſeed-earth is given to the land. It ſeems however to be the better method to turn in the dung by the laſt ploughing or ſeed-earth; becauſe it is then turned down, not by a ſhallow furrow, but covered as ſoon as poſſible from the ſun; and depoſited where the roots will be ſure to find it, and where the immediate action of the ſun and wind is excluded: whereas in mixing the manure with the ſoil by the harrow, much of it is pulled out, and left expoſed on the ſurface [d].

Rough dung is in general preferred to ſuch as is rotten; a better crop however has been obtained, by mixing dung with earth or other manure in the winter, and getting it rotten enough to lay at top, and harrow it in with the ſeed, than by ploughing in long dung [e].

Rape-cake, in a pulverized ſtate, is alſo recommended for turnep-manure. Being reduced to powder by two mills, it is put into the drills. The quantity uſed to an acre is a quarter of a ton; which has never exceeded 1l. 5s. in price [f]. Others uſe malt-coombs, ſoot, ſoapers-aſhes, lime, crag, *&c.* but none of theſe manures are very general, or ſo effectual as farm-yard dung.

*Seed and Sowing.*]

Mr. Miller recommends two pounds of Turnep-ſeed as fully ſufficient for an acre of any land; one pound being the common allowance. [Some ſow but a quart, nay but a pint, whilſt others allow half a gallon to an acre. Half the quantity that is ſown broad-caſt will do when the ſeed is ſown in drills.

But the quantity of ſeed depends much on the ſoil: upon a naturally good Turnep land a pint an acre, evenly delivered by a good hand, or ſowing engine, will be enough; but in general two pints are allowed. No ſoil requires ſo much ſeed as chalky lands, when the chalk comes quite to the ſurface: upon ſuch ſoil, a quarter of a peck will ſeldom be too much for an acre, becauſe the fly is ſure to attack the plants more voraciouſly and with greater certainty on this ſoil than on any other. The ſowing engine, though with care a good tool, yet is liable to have the holes ſtopped by two ſeeds ſticking in them, ſo that if the ſower is not very attentive, he may go ſome diſtance, without a regular delivery [g].]

The common ſeaſon for ſowing Turneps, is any time from the beginning of june till the middle of auguſt, or a little later, though it is not adviſeable to ſow them much after; becauſe, if the autumn ſhould not prove very mild, they will not have time to apple of a proper ſize before winter; nor will the roots of thoſe which are ſown after the end of july grow very large, unleſs the froſt keeps off long in autumn. But, notwithſtanding this is the general ſeaſon in which the greateſt part of Turneps are ſown in the country, yet about London they are ſown ſucceſſively from march to auguſt, by thoſe who propagate them to ſupply the markets with their roots; but there is a great hazard of loſing thoſe which are ſown early in the year, if the ſeaſon ſhould prove dry, by the fly, which will devour whole fields of this plant while young; ſo that where a ſmall quantity for the ſupply of a family is wanted, it will be abſolutely neceſſary to water them in dry weather; and where a perſon ſows thoſe ſeeds in april and may, it ſhould always be upon a moiſt ſoil, otherwiſe they ſeldom come to good, the heat of the weather at that ſeaſon being too great for them upon a dry ſoil; but thoſe which are intended for the general crop, are ſown towards the end of june, when they commonly receive ſome refreſhing ſhowers to bring them forward; without which it is very common to have them all deſtroyed.

[The ſeaſon for field-ſowing extends from a week before midſummer, the 17th or 18th of june, to the middle or end of july. This variation is neceſſary for two reaſons; firſt, becauſe the land cannot be all manured to ſow early; and ſecondly, becauſe the late ſown will laſt much longer than the early ones, which are ſubject to the blight or mildew, and conſequently

[z] Boote in tranſ. arts, vol. 6. for 1788, p. 95.
[a] Dann, Ibid. vol. 10. for 1792. p. 61, &c.
[b] Boote, Ibid. vol. 6. p. 93, 94.
[c] Macro, in Young's ann. 3. 299.
[d] Young's ann. 22. p. 14.
[e] Kent's report for Norfolk.
[f] Macro, ibid. 7. 188.
[g] Macro in Young's ann. 3. 360.

conſequently are more likely to be rotted by hard froſts afterwards; for which reaſon, all farmers ſhould take care to have ſome late ſown. Sometimes a crop ſown the firſt week in auguſt has proved the moſt profitable; this having eſcaped, whilſt the reſt have been killed by the froſt[r]. An active farmer therefore, will, in caſes where it is neceſſary, as ſoon as he has ſet up or ſhocked his wheat, plough up the intervals, and ſow them immediately with Turneps, for the chance of a late crop, which will furniſh ſpring feed, although they ſhould fail of appling well.

Where a farmer has many Turneps, it does not ſeem a bad plan to ſow a fourth part at the end of june or the beginning of july to come early; half in the middle of july for the main crop, and the remainder at the end of the ſame month to come late[s]. This however muſt depend upon his buſineſs, the weather, and other contingencies. At any rate the main crop ſhould not be ſown too ſoon, nor allowed too much room; becauſe large roots will not ſtand the froſt near ſo well as ſmaller ones[t].

What is ploughed for the laſt earth ſhould always be ſown the ſame day, elſe, unleſs rain fall, the ground will be too dry for the ſeed to vegetate.] The ſeed muſt be harrowed in as ſoon as it is ſown with a ſhort-tined harrow; and the ground rolled with a wooden roller, to break the clods, and make the ſurface even. The plants will come up in ten days or a fortnight after ſowing. [But this will vary much with the weather; and there will be a difference of three days between the germinating of new and old ſeed.

*Hoeing.*]

When the plants have got four or five leaves, they ſhould be hoed to deſtroy the weeds, and to cut up the plants where they are too thick, leaving the remaining ones about ſix or eight inches aſunder each way, which will be room enough for the plants to ſtand for the firſt hoeing; and the ſooner this is performed, when the plants have four leaves, the better they will thrive; but in the ſecond hoeing, which muſt be performed about a month after the firſt, they ſhould be cut up, ſo that the remaining plants may ſtand fourteen or ſixteen inches diſtance, or more, eſpecially if they are deſigned for feeding cattle; for where the plants are allowed a good diſtance, the roots will be proportionably large, provided the ground is good; ſo that what is loſt in number, will be overgained by their bulk. But in places where they are ſown for the uſe of the kitchen, they need not be left at a greater diſtance than a foot, becauſe large roots are not ſo generally eſteemed for the table.

[The time for the firſt hoeing of field Turneps is very uncertain, depending on the ſoil and the ſeaſon, and varying from three to eight and even nine weeks from the time of ſowing. The ſize of the plants is the only guide; and the beſt rule is to begin hoeing, as ſoon as they are about the ſize of the palm of the hand, or ſpread upon the ground from three to four inches.

If the hoe be put in too ſoon, the plants which are ſet out are liable to be buried, and their roots diſturbed, in ſetting out others which are near them. And if the Turneps be ſuffered to grow too large, it is difficult to ſet out the plants, and they are liable to be drawn up by weeds. If theſe be numerous or luxuriant, it will be neceſſary to begin hoeing ſomewhat earlier, in order to check them in time. Some perſons run over the ground with a light harrow once in a place as ſoon as the plants are ſtout enough, to aſſiſt the hoeing; and if any of the fields, after the hoeing begins, get too forward, which in a wet ſeaſon is often the caſe, they give them a ſecond harrowing the contrary way.

Nothing but practice can teach the method of hoeing Turneps; to be performed well it requires a quickneſs of eye, and a dexterity of hand, which do not fall to the lot of every man. The hoe is generally drawn round the plant with a long ſweeping ſtroke; and when the plants are ſmall, this is the only ſtroke that ought to be uſed; but when the plants are out of danger of being buried, a ſhort ſtraight ſtroke is more expeditious, and in ſome hands makes tolerably good work. The general effect of hoeing ought to be, that the whole ground ſhould be ſtirred, all the weeds effectually cut up, and the plants ſet out ſingly at proper diſtances.

The common practice is to ſet out the plants at fourteen or fifteen, and ſometimes at eighteen inches diſtance. This however is not always neceſſary, and is frequently injurious. The proper diſtance depends upon the ſoil, and the time of ſowing. The richeſt ſoil will admit of the greateſt diſtance, becauſe the plants in that will be more luxuriant than in a ſoil of inferior quality. And early ſown Turneps will come to a greater ſize than ſuch as are ſown late, and therefore ſhould be allowed more room to ſpread themſelves. The beſt general rule in this caſe is, to give the plants room to keep themſelves in a ſtate of vigour and full growth, without leaving any ſpace unoccupied by, or even thinly filled with leaves. Since Turneps therefore commonly run from four to eight inches in diameter, twelve inches may be taken as a proper medium diſtance, except in land of an extraordinary goodneſs.

The main purpoſe of the ſecond hoeing is to looſen the mould, and draw it in ſome meaſure to the roots of the plants; to reduce the weeds effectually; and to ſingle ſuch plants as have been left double by the firſt hoeing; as well as to remove ſuch as have been miſſed, or having been buried in the looſe mould in moiſt weather, have ſtruck root again in improper places. With reſpect to the time of this ſecond hoeing, it ought to be given before the leaves become too large to prevent the plants from being properly ſingled and ſet out, or the weeds from being effectually cleared away; but the longer they ſtand before the laſt hoeing, the more effectually will the weeds be overcome.

If when the Turneps are ſo cloſed as to exclude all hoeing, any weeds ſtill ſhow themſelves, women and children ſhould be ſent in to pull them by hand.

The ſecond hoeing is ſometimes omitted, but ſeldom without great detriment to the crop and the land; and, ſtrange to tell, there are yet ſome parts of the kingdom where it is ſaid all hoeing of Turneps is yet unpractiſed.

Upon the whole, the object of the firſt hoeing ſhould be, not ſo much that of ſetting out the plants at exact and wide diſtances, as of checking the weeds, and thinning the plants to prevent their crowding each other: the regulation of diſtances ſhould be left in a great meaſure to the ſecond hoeing. In the firſt, by reaſon of the many accidents young Turnep plants are liable to, it is a work of hazard and uncertainty; in the ſecond, not only proper diſtances, but proper plants, may be choſen, with a degree of ſafety and certainty.

The Norfolk hoes are from nine to eleven inches wide. It is the intereſt of the hoer to work with a wide hoe, becauſe he gets over his work quicker, and has fewer plants to ſet out; his intereſt therefore is, in this caſe, in direct oppoſition to that of his employer. The width of the hoe ought to be in proportion to the medium diſtance between the plants; and that, as has been ſaid, ſhould be in proportion to their expected ſize. For twelve inches a ſeven-inch hoe is ſufficient.

By ſowing at different ſeaſons, ſix men will hoe an hundred acres twice over. Such as do not vary the ſeaſon muſt of courſe proportionably increaſe the number.

The price, in Norfolk, is 6s. an acre for the two hoeings, when let jointly, as they commonly are. If let ſeparately, the firſt is from 3s. 6d. to 4s.; the ſecond, from 2s. to 2s. 6d.

In other counties, 8s., 10s., and even 12s. an acre

[r] Macro in Young's ann. 3. 300. [s] Belcher, ibid. 2. 344. [t] Id. 347.

acre are given for the two hoeings; but the Norfolk men are more expert in the buſineſs; and the ſoil of that country is more friable and free from obſtructions [h].

In crops of drilled Turneps the work of hoeing may certainly be done cheaper, namely from four to five ſhillings the acre: and cheaper ſtill with the horſe-hoe, when hand-hoeing will be required only in the rows.

When the Turneps are ſown in drills, it will be the beſt way to hoe between every other row at firſt, and ſome time after to hoe the alternate intervals, by which method the plants will receive more benefit from the often ſtirring the ground, than they would do if all the intervals were hoed at one time, and the plants will be in leſs danger of ſuffering from the earth being thrown up too high on ſome rows, while others may be left too bare of earth; but, when the earth has been thrown up on one ſide of the drill, it may be turned down again when the next interval is hoed, and this alternate moving of the earth will prepare the ground very well for the ſucceeding crop, as well as greatly improve the Turneps; but, as this plough cannot well be drawn nearer to the drills than two or three inches, the remaining ground ſhould be forked to looſen the parts, and make way for the fibres of the roots to ſtrike out into the intervals, otherwiſe, if the land be ſtrong, it will become ſo hard in thoſe places which are not ſtirred, as to ſtint the growth of the Turneps, and this may be done at a ſmall expenſe; a good hand will perform a great deal of this work in a day, and, whoever will make the trial, will find their account in practiſing it, eſpecially on all ſtrong land, where the Turneps are much more liable to ſuffer from the binding of the ground, than on a looſe ſoil; but yet, in all ſorts of ground, it will be of great ſervice to practiſe this.

When the ground is thus ſtirred in every part, one ploughing will be ſufficient, after the Turneps are eaten off the ground, to prepare it for the ſowing of Barley, or any other crop: ſo that there will be an advantage in this, when the Turneps are kept late on the ground, as will often be the caſe, eſpecially when they are cultivated for feeding of ewes, becauſe it is often the middle of april before the ground will be cleared; for late feed in the ſpring, before the natural Graſs comes up, is the moſt wanted, where numbers of ſheep and ewes are maintained, and one acre of Turneps will afford more feed than thirty acres of the beſt paſture at that ſeaſon.

*Application or Uſe.*

The chief conſumption of field Turneps is for feeding either neat cattle or ſheep. The firſt is moſt common in Norfolk, and the ſecond in moſt other counties.

In feeding neat or black cattle, the moſt common practice is to draw and cart off the whole crop. The time of drawing begins about michaelmas, and continues until the plants are in blow. They are drawn by hand, until the froſt is in the ground, or has cut off the tops; they are then pulled by two-tined hooks, which in Norfolk they call crooms. When the roots are buried in a deep ſnow, it is removed by an implement called the ſnow-ſledge. The head-lands and ſide-lands are firſt cleared; and then, they begin on one ſide, and clear the ground progreſſively for the plow. Some leave the ſmall roots, to increaſe in ſize, and to throw out tops for feed in the ſpring: but this can be done only on land that will bring Barley with one ploughing.

The moſt common method of giving Turneps to cattle, is by throwing them abroad on ſtubbles, graſs-lands, and fallows. The general practice is to begin with the wheat-ſtubbles, until they are broken up for fallow for Barley. The next throwing-ground is frequently the barley-ſtubbles, until they in their turn are broken up for turnep-fallow. From about chriſtmas until the beginning of april, the clover-lays are thrown open; and after theſe are ſhut up, the turnep-fallows, ſometimes become the throwing-place.

In throwing Turneps, the carts begin on one ſide of the land, and work regularly to the other, giving every part an equal ſhare, and never throwing twice in the ſame place, until the whole is gone over.

At the beginning of the ſeaſon, whilſt graſs is ſtill in plenty for the lean ſtock, the fatting-cattle are kept conſtantly in the ſame piece, having a freſh ſupply of Turneps every day, or every two days at fartheſt.

But when the clover-ſtubbles are cleared, and the ſtore-beaſts begin to want aſſiſtance from Turneps, the fatting-cattle are followed by rearing-cattle, lean bullocks, cows, or ſtore-ſheep, to pick up their leavings.

In this caſe it is convenient to have three ſhifts or pieces of throwing-ground; one for the head beaſts, one for the followers, and the third empty to throw in. Two pieces or diviſions are indiſpenſably neceſſary.

The Turneps ſhould be thrown evenly and thinly, about a yard aſunder, not in heaps or parcels; for whilſt a bullock is breaking one Turnep, he ſhould not have it in his power to tread or dung upon another.

The bullocks are ſometimes, when the diſtance is not too great, driven into the ſtraw-yard at night: otherwiſe they have a little ſtraw given them under the hedge, merely to clean their mouths from the dirt of the Turneps.

Not one in ten of the high-finiſhed bullocks, that are annually ſent to Smithfield market out of Norfolk, taſte one handful of Hay, or any other food, beſides Turneps and Barley-ſtraw, except ſuch as are finiſhed with Ray-graſs in the ſpring; and a few that have a little Hay and Turneps towards ſpring, when the Turneps are going off, before the Ray-graſs lays are ready to receive them; which is an excellent practice, bullocks being otherwiſe liable to receive a check between Turneps and Graſs.

It is evident that this method of throwing Turneps cannot be practiſed except on dry land, and not even on that in a wet ſeaſon. In ſuch caſes nothing but a ſound old lay will anſwer the purpoſe; and where it can be done, a farmer ſhould contrive to have two ſuch pieces in the neighbourhood of his Turneps.

Another method of fatting cattle, is to keep them looſe in a ſtraw-yard, giving them the Turneps in cloſe bins or ſmall cow-cribs, with boards or bars nearly cloſe at bottom. The Turneps are uſually put in whole, being firſt tailed, that is, having their tap-root cut off, in the field; and alſo topped, unleſs the tops be freſh and palatable: theſe, if eatable, being given to ſtore cattle.

This method is ſomewhat more troubleſome than that of throwing the Turneps abroad; which, if the ſoil be dry enough to bear ſtock, and ſo light as to be benefited by treading, is upon the whole the moſt eligible management. But in deep land, and in a wet or ſevere ſeaſon, the yard, if it be kept dry and well littered, is the more comfortable place; eſpecially if it be provided with open ſheds for the cattle to take ſhelter under in inclement ſeaſons. By this method the dung is loſt abroad, which is highly ſerviceable to light land, but then a great quantity of manure is made in a yard well littered.

A third method of fatting beaſts on Turneps, is to keep them tied up in hovels, or under open ſheds, with troughs or mangers to receive the Turneps, which are frequently chopped into ſlices, or elſe quartered, which is not ſo eligible. The top, with the crown of the root, is thrown aſide for the ſtore-cattle, and the tap-root, with the bottom rind, is ſuffered to drop on one ſide of the baſket, ſo that the fatting-cattle have only the prime part of the bulb.

This accounts for the quick progreſs which ſhed-bullocks ſometimes make, eſpecially in cold weather;

[h] Marſhall's Norfolk, vol. 1. p. 256, &c.

ther: but on account of the extraordinary attendance they require, not only in cutting the Turneps, but in littering and cleaning out their ſtalls; beſides the check they are liable to receive in cloſe weather; this practice is ſeldom followed by large farmers, unleſs to puſh forward a particular beaſt.

Much depending on care and management in this method, little farmers, who have leiſure and inclination to tend their own ſheds, may find their account in it. The cattle have a little Barley-ſtraw given them from time to time, to clean their mouths, and dry up the ſuperfluous juice of the Turnep[1].

If the Turneps could be boiled or baked at a moderate expenſe, a much ſmaller quantity would ſuffice to fatten the bullocks[2].

In ſome places good Hay is given with the Turneps; and in others Pollard or Barley-meal.

The ſecond great application of Turneps is to feeding ſheep. On the beſt turnep-land, that is ſufficiently dry, there is no better preparation for Barley than feeding ſheep with Turneps upon the land. Thoſe however which are eaten early in the winter will not give Barley ſo good as thoſe which are eaten later, provided they do not run to flower; for then they are ſuppoſed to exhauſt the land and injure the ſucceeding crop. Carting off on ſuch land, beſides the expenſe, is not adviſeable, the crop of Barley depending on the manure and treading of the ſheep[3].]

When the Turneps are fed off the ground, the ſheep ſhould not be ſuffered to run over too much of it at one time; for if they are not confined by hurdles to as much as is ſufficient for them one day, the ſheep will ſpoil three times the quantity of Turneps they can eat, ſo that it is very bad huſbandry to give them too much room; therefore the hurdles ſhould be once or twice every day removed forward; and, if the Turneps are drawn out of the ground before the ſheep are turned into the new incloſure, there will be leſs waſte made, for they will then eat up the whole roots; whereas, if they are turned upon the Turneps growing, they will ſcoop the roots, and leave the rinds, which being hollow, the urine of the ſheep will lodge in them; ſo that when they are forked out of the ground, the ſheep will not eat any one of thoſe roots which are thus tainted.

[When a flock of ſheep are turned into a piece of ſtanding Turneps, the firſt thing they do is to run over the whole, and then to eat ſuch of the tops as they have not trampled down. Whilſt they are doing this, they ſtand upon the roots, which being firm in the ground, and flat on the top, are not inconvenient to ſtand upon; and if one of their feet happen to fall near the edge of the Turnep, it frequently barks and fouls the root. Whereas if ſheep be put upon drawn Turneps, their tops may be injured, but their roots cannot; for being round, and lying looſe on the ground, they afford no foot-hold, but become ſtumbling-blocks to the ſheep, which therefore carefully avoid them, and ſtand on the ground. But the better to avoid waſte, it is frequently the practice, inſtead of hurdling the ſheep upon the crop, to keep them back upon the cleared ground, and to throw the Turneps upon it. But in this caſe the Turneps muſt either be thrown in part over ground already fouled by the ſheep, or muſt be confined to the ſpace from which they are drawn, by which means the principal intention of drawing is fruſtrated. Some farmers therefore who fat large quantities both of neat cattle and ſheep, purſue another method in the conſumption of their crop.

The headlands and ſidelands being cleared, the area is drawn and carried in alternate ſtripes about ten paces wide. The firſt drawing is expended on the bullocks in one or other of the ways already deſcribed; whilſt the remaining ſtripes are drawn and ſcattered over the whole ground for the ſheep.

[1] Marſhall's Norfolk, vol. 1. p. 284 to 295.
[2] Symonds, in Young's ann. 2. 273. [3] Macro, ibid. 3. 302.

Thus the principal intention of drawing is obtained; namely, that of diſtributing the Turneps evenly and thinly, ſo that whilſt one is eaten, another may not be ſoiled[a].]

I cannot omit taking notice of a common miſtake, which has generally prevailed with perſons who have not been well informed to the contrary, which is, in relation to the mutton which is fattened with Turneps, moſt people believing it to be rank and ill taſted, whereas it is a known fact, that the beſt mutton this country affords is all fattened on Turneps; and that rank mutton, whoſe fat is yellow, is what the low marſhy lands of Lincolnſhire, and other rank paſtures produce.

[Turneps are ſometimes uſed for feeding milch cows. This is a bad practice when the milk is uſed for making butter, which acquires a diſagreeable taſte from this root; but it anſwers very well in ſuckling, as it keeps the cow in heart, and furniſhes abundance of milk.

A ſecond mode of application of field Turneps is by ſale. It is not a general practice to raiſe Turneps for this purpoſe; nevertheleſs every year ſome are ſold. Little farmers, who want conveniency or ſkill, and larger ones who want money to lay in a proper ſtock, or who from the comparative prices of ſtock and Turneps judge it more eligible to ſell than to feed, ſell their Turneps to thoſe who have judgment, money and ſpirit to buy ſtock.

Sale Turneps are uſually conſumed on the premiſes. Sometimes the buyer and ſometimes the ſeller draws the crop and tends the cattle, for which ſometimes the one and ſometimes the other finds Straw.

The medium price of a middling crop of Turneps is about fifty ſhillings an acre; but the price is ſubject to great and ſudden fluctuations[b].

The third application of Turneps is to raiſing of ſeed.]

In order to ſave good Turnep-ſeeds, you ſhould tranſplant ſome of the faireſt roots in february, placing them at leaſt two feet aſunder each way, obſerving to keep the ground clear from weeds, until the Turneps have ſpread ſo as to cover the ground, when they will prevent the weeds from growing; and when the ſeed-pods are formed, you ſhould carefully guard them againſt the birds, otherwiſe they will devour them, eſpecially when they are near ripe. When the ſeed is ripe, it ſhould be cut up, and ſpread to dry in the ſun; after which it may be threſhed out, and preſerved for uſe.

[It is generally underſtood that no Turnep-ſeed is fit to be ſown that has not been raiſed from tranſplanted roots; but in Norfolk it is thought that if the ſeed be gathered repeatedly from untranſplanted roots, the Turneps will become coarſe-necked and foul-rooted, and the fleſh of the root rigid and unpalatable; and that if they be gathered year after year from tranſplanted roots, the necks will become too fine, and the fibres too few, the plant acquiring a weak delicate habit, and the produce, though ſweet, being ſmall.

Sweetneſs therefore, and not ſize, being the quality requiſite for the table, it is a good rule for the gardener to raiſe his ſeed generally from tranſplanted roots. But it is the farmer's intereſt to avoid the two extremes of coarſeneſs and delicacy, which can be accompliſhed only, by ſometimes tranſplanting his ſeed-plants, and ſometimes letting them run up in the ſeed-bed: and it is found by experience, that tranſplanting two, three or four years, and letting the plants run up in the third, fourth or fifth, will keep the ſtock in the deſired ſtate. The time of tranſplanting is from old chriſtmas to old candlemas. The cleaneſt plants are the beſt, without much reſpect to ſize. A piece of good ground near a habitation is moſt proper for the purpoſe; becauſe the plants can there be moſt eaſily defended from the depredations of the birds[c].

[a] Marſhall's Norfolk, 1. p. 296. [b] Ibid. 283.
[c] Ibid. 278.

It

It is of great conſequence to ſecure ſeed of a good ſort and quality, which cannot always be obtained from dealers; without care it will degenerate, and a mixed ſeed is too frequently ſold: ſuch perſons therefore as are curious, ſhould either raiſe it themſelves, or have it raiſed by a neighbouring labourer, or at leaſt procured from thoſe on whom they can depend. The large green-topped Turnep is the moſt productive, the ſweeteſt and moſt juicy; but the red or purple-topped is the hardieſt.

*Accidents and their Cure.*

Admirably as this root is calculated for cleaning land, and feeding cattle and ſheep, it is to be lamented that it is ſo liable to accidents and failures as not to be abſolutely depended upon for theſe purpoſes. This crop has the fly and many other enemies of the inſect tribe to contend with, in the early ſtage of its growth; ſecond and third ſowings, which are frequent, ſeldom produce much more than good ſpring-feed for ſheep; alternate froſts and thaws rot the Turneps before the ſeaſon of greateſt neceſſity arrives; or if they are not abſolutely rotted, beaſts fatten but ill on frozen Turneps; if on the contrary the winter be mild, the Turneps run to flower, and then the root has little ſubſtance in it [p].

The Turnep-crop is precarious, principally becauſe the farmer is obliged to depart from the common courſe of nature in accommodating it to his wants. Inſtead of putting the ſeed into the ground in the ſpring months, when there would be as great a certainty of a crop as of any other vegetable, he is obliged to defer ſowing till the hotteſt ſeaſon of the year comes on, when unleſs he is ſo fortunate as to have a few rainy days, or cloudy weather with frequent ſhowers, he can have little hope of ſucceſs [q].

The firſt enemy of the Turnep is the *fly*, as it is commonly called, or as others name it, the *flea*, or, as it is provincially termed, the *black dolphin*. It is in fact a ſmall inſect of the coleopterous or beetle tribe, and is named by naturaliſts *Coryſomela ſaltatoria*. In hot ſummers it abounds to an amazing degree, and may be heard in a field or garden, among the leaves of Turneps or any of the Cabbage kind, make a pattering like rain [r], from its continual ſkipping. This miſchievous inſect is not more than from one-twelfth to one-tenth of an inch in length, it attacks the plant as ſoon as it appears above ground, whilſt it is in the ſeed-leaf; and as ſoon as the rough leaves are put out ſtrong, the plant is ſuppoſed to be ſafe from this enemy, which is calculated to deſtroy an entire crop once in five or ſix years, beſides the partial damage which it does in moſt years. It has however a companion in miſchief, the *Turnep-bug*, which becomes a ſmall fly, about one-twentieth of an inch long, and not larger than a grain of Turnep ſeed. It is the ſame with the *Black Bug*, *Collier* or *Negro*, with which Beans are frequently infeſted, in ſome places provincially called *Smother-Fly*. The bugs, or fly in a larva ſtate, frequently cover the under ſides of the ſeed-leaves, and are of different colours; yellow, green, and black. When the ſeedling plants are infeſted with them, they make no progreſs, nor any viſible effort to get into rough leaf: fifty of theſe vermin have been counted under one pair of ſeed-leaves, ſucking the juices through their long proboſces. The ſmalleſt of the flies, or *aphides*, are of a cream colour, the next green, the next to theſe red-diſh green, and the largeſt black.

The deſtruction however which is imputed to the fly, or to ſpeak more properly, the turnep-beetle, ſometimes ſeems to originate in the ſeaſon. When the ſoil is fully and permanently moiſtened by a ſteeping rain, the ſeed will vegetate, the plants will puſh into rough leaf, and riſe without a check, though the beetle and their other inſect enemies be in full force: but if the Turneps have only ſhowers to depend upon in hot dry weather, the ſeed will vegetate; but by the time the ſeed-leaves are formed, the moiſture is wholly drawn off by the intervening days of drought, and the plants deprived of nouriſhment paſs away, parched up as in an oven [s].

The injury however which is done by the fly being confeſſedly great, many remedies have been propoſed for it, which ſhall be here ſet down, although it is much to be feared that they are by no means effectual.

Some good, it is ſaid, may be done, by running a light roller over the crop, with a bundle of Blackthorn faſtened behind it [t]. Branches of Elder are recommended to be drawn over the Turneps, in the ſame manner: and the ſeed is directed to be ſoaked in the juice of the bruiſed leaves. But theſe are palliatives at beſt, and have been found to be utterly ineffectual [u].

Some perſons recommend the land to be fumigated, by burning heaps of quich and other weeds to windward, when it is ready for ſowing, and after the ſeed is come up. Whilſt others preſcribe a ſteep for the ſeed of train or other oil, in which it is to be immerſed twenty-four hours or more; when the ſeed is drained from the oil, it is to be mixed with good earth finely ſifted, and ſown immediately; when the plants begin to appear, the ground is to be ſown with ſoot, from eight to ſixteen buſhels the acre [x].

Soot is very generally recommended as a ſpecific againſt the fly; ſo alſo is tobacco-duſt, but this can be applied only in ſmall crops, ſuch as are grown in gardens. We are told to ſhake the ſeed in a bottle with flower of brimſtone, and to ſow them together; or to ſteep it in water ſtrongly impregnated with brimſtone, or horſe-aloes [y].

A much more likely way than any of theſe to ſecure a good plant of Turneps is, after having made the land clean and fine as ſoon as the weather will permit, to ſow two, three, and even four pints of ſeed upon an acre, in ſuſpicious ſeaſons: thus having a ſufficient quantity of plants for the fly and the crop. In caſe the fly does not take them, it may be ſaid, that the plants will be ſo thick, that they cannot eaſily be hoed; they may however be made fit for the hoe by harrowing them firſt; and at any rate it is a leſs evil to have too much work for the hoe than little or no crop [z].

Another method of ſecuring a crop, is ſowing ſeed that will germinate at different times. This may be done by mixing new and old ſeed together, and by ſoaking half of each in water or the drainings of a dunghill for half an hour, and then ſpreading it on a floor until it is dry enough for ſowing. Thus there will be four chances for a crop, as the ſeed thus mixed and prepared will come up at four different times [a].

Or ſow immediately after the plough without harrowing, and then the ſeeds lying at different depths, will come up at different times, and conſequently have ſeveral chances of eſcaping the fly or turnep-beetle [b].

It is very ſenſibly remarked by Mr. Miller, that whatever will add vigour to the young plants, will prevent their being deſtroyed by the fly, for theſe never attack them till they are ſtinted in their growth. Good tillage therefore, and having the land in heart, is of more conſequence to prevent the ravages of the fly, than all the noſtrums that have been publiſhed.

The provident farmer will, as far as he can, watch for favourable opportunities to ſow his ſeed; and he had better defer ſowing, than do it when the weather is hot and dry. He will have his land

[p] Young's ann. vol. 2. 357. & 7. 350.
[q] Wimpey, in Bath papers, vol. 4. p. 132.
[r] White's Selborn.
[s] Marſhall's midland, 2. p. 124. & 175. Wimpey in Bath papers, 3. 180.
[t] Hill, in Bath papers, 3. 99.
[u] Young's ann. 6. p. 90. & 7. p. 104. Bath papers, 2. 7. & 4. 140.
[x] Young's ann. 7. p. 102: 6. p. 156. & 7. p. 168.
[y] ——— 6. p. 197. Bath papers, 2. 115.
[z] Marſh. midland, 2. 174. Bath papers, 2. 256.
[a] Young's ann. 3. p. 10. Marſh. Norf. 2. p. 4. Bath papers, 2. 306.
[b] Belcher in Young's ann. 2. 344.

in proper order: he will be at the pains of procuring good ſeed, new if he can get it; and he will ſow a ſufficient quantity: but above all, he will lay in a proper quantity of manure, to promote the growth of the young plants, and to puſh them forwards as faſt as poſſible. It is this purpoſe that is anſwered by dreſſings of aſhes, ſoot, and compoſts of lime and dung, &c. in ſufficient quantities; either ſown with the ſeed, or rather immediately before, well harrowed in, and completely incorporated with the ſoil[e]. There is ſome doubt however reſpecting the expediency of dunging largely for Turneps. One ſays, the only precaution againſt the fly conſiſts in ploughing the land till it is very fine, and filling it with muck[d]. Whilſt others are of opinion, that the flies are increaſed by the dung[e]: which is certainly a nidus for a great variety of inſects. Folding perhaps may be better than dunging, the treading of the ſheep both deſtroying the inſects, and rendering light land more firm[f].

In ſeaſons wherein apprehenſions of the fly are entertained, it is recommended to plough for ſowing as ſoon as it is light in the morning, only ſo much land as can be ſown and harrowed by ſix o'clock; and about ſix in the evening again to plow as much as can be ſown and harrowed before dark. The ſeed being thus ſown whilſt there is ſome moiſture in the newly ploughed ground, will vegetate ſooner, and come up more regularly than it would do if the ground were dry. If the ſeaſon ſhould prove dry, the ground ſhould be well looked over, and when the young plants begin to be attacked by the fly, the land ſhould be ſtrewed all over with vegerable aſhes, and the night following it ſhould be rolled. If rain comes in a day or two after, the Turneps will ſoon be out of danger, by waſhing the ſalts of the aſhes to their roots: if not, in a week's time, a freſh dreſſing of aſhes with rolling ſhould be applied a ſecond time.

Where wood or peat aſhes are not to be had in plenty, the farmer ought to raiſe a quantity for this purpoſe from burning quich and other weeds, or turf, litter, furze, heath, fern, &c. Or if he has only a ſmall quantity of aſhes, he may have recourſe to a compoſt of theſe with ſoaper's aſhes, coal aſhes, quick lime and ſoot, mixed well by turning them two or three times, and paſſing them through a ſieve. It is ſcarcely neceſſary to add, that the aſhes ſhould be kept in a dry place. When large patches are irrecoverably gone, it is beſt to plough immediately, and ſow again, harrowing in the ſeed. The early ſtone Turnep is recommended for this purpoſe, becauſe it comes to maturity ſooner than the common ſort, and may be ſown twenty days after the firſt ſowing[g].

The *Bug-fly* or *Aphis*, is by no means ſo tremendous an enemy as the Beetle. Being extremely ſoft and tender, and therefore eaſily cruſhed, a light roller, eſpecially if it were muffled in ſome ſoft elaſtic covering, ſo as to preſs in between the clods, might perhaps be effectual in deſtroying theſe inſects, without injuring the plants[h].]

Another danger of the crops being deſtroyed is from the *Caterpillars*, which very often attack them, when they are grown ſo large as to have ſix or eight leaves on a plant. The ſureſt method of deſtroying theſe inſects is to turn a large parcel of poultry into the field, which ſhould be kept hungry, and turned in early in the morning; theſe fowls will ſoon devour the inſects, and clear the Turneps. To this evil the Turneps, which are ſown in drills, are not ſo much expoſed, for as the ground between the rows will be kept ſtirred, the plants will be kept growing, and will not be in danger of ſuffering from theſe inſects; for the parent inſects never depoſit their eggs upon any plants which are in health, but

[e] Wimpey, in Bath papers, 4. 134, &c.
[d] Kent's report on Norfolk.
[e] Marſhall's Norfolk, 2. p. 35.
[f] Id. ibid. and Bath papers, vol. 2. p. 233.
[g] Barnes, in Young's ann. 12. 339.
[h] Marſhall's midl. 2. p. 181.

as ſoon as they are ſtinted, they are immediately covered with their eggs; ſo that it is the diſeaſe which occaſions the vermin, and not the vermin the diſeaſe, as is commonly imagined. Therefore as the plants will always be in greater health when the ground is well ſtirred about them, there will be leſs danger of their ſuffering from theſe enemies, when they are cultivated by the horſe-hoe, than in the common way.

[Theſe caterpillars are provincially called *black Cankers*. They are not ſo univerſal as the fly or turnep-beetle; but their ravages, though partial, are in ſome ſeaſons very great, eſpecially near the ſea-coaſt. The parent inſect of theſe caterpillars is diſcovered to be a fly of the *Tenthredo* kind, which comes over frequently in large flights from the continent, eſpecially when the wind blows for a long time from the north-eaſt. The fly is of a yellow colour; the female conſiderably larger than the male, and appearing of a brighter yellow, when on the wing: the head is black, and there are two black patches on the ſhoulders, in the ſhape of a lozenge. The caterpillar is of a jetty black, except a whitiſh line on each ſide, juſt above the ſetting on of the legs, which are twenty in number: it is wrinkled, but has no hair, and, when full grown, is about half an inch in length. When it is near changing, it becomes blueiſh or lead-coloured, with a black waving line along the back. On the plant being ſhaken whereon they are feeding, or on any apprehenſion of danger, the caterpillars coil themſelves up in a circular form, and appear inanimate, till they think the danger is over. They retire under ground to go into their chryſalis ſtate, or to change from caterpillar to fly.

Many remedies have been propoſed for the ravages of this occaſionally deſtructive inſect. As drawing a rope over the ridges, two perſons holding the ends; this will bruſh the caterpillars off, and perhaps may ſave a few acres, where it can be frequently repeated, and the inſects are not very numerous. It is an improvement upon this expedient, to faſten twigs upon the rope. Elder twigs have been preferred, but certainly without ſufficient reaſon. Stiff crooked boughs will injure and tear the plants. Others draw a bruſh made of furze over the Turneps: the branches are fixed to a long pole or axle-tree, with a wheel at each end, of ſuch a height, that the furze will bruſh the plants without pulling them up by the roots.

Lime, ſoot, and other dreſſings have been tried without effect. Rolling checks them, eſpecially if repeated, but is not a cure for the evil. Fumigation by brimſtone, &c. has been recommended. When part only of a piece is attacked, it is an effectual expedient to draw a furrow acroſs the incloſure, deepening it with a ſpade, making the ſide towards the uninfected plants upright or overhanging, and ſpreading lime along the bottom. A trench acroſs a gateway between two turnep-pieces will anſwer the ſame purpoſe.

Poultry have been mentioned above as highly beneficial. Rooks alſo are very ſerviceable. But ducks have been moſt ſucceſsful in curing this evil[i]. The ducks ſhould be half or three quarters grown: old ones are lazy, and will ſooner eat the turnep-tops than run after the caterpillars. They ſhould be regularly driven to water, and reſted three or four times a day. After drinking they diſgorge the caterpillars in great abundance, and ſoon fall to again with freſh appetite. Four hundred ducks have cleared thirty-three acres in five days moſt completely; but twenty or thirty may be employed on a ſmall farm to great effect. When caterpillars grow ſcarce, the ducks will take to the turnep-tops, and do more harm than the few caterpillars which are left. It is then better to turn out the ducks, and pick over the plants by hand, if there be ſtill any apprehenſion from the inſects.

Where the Turneps have been hoed out, many

[i] Marſh. Norfolk, 2. p. 15 & 285. Midl. 2. p. 178.

perſons have begun with hand-picking them; when the caterpillars are very abundant this is tedious and expenſive; but where they are in moderate quantities, it may be done by women and children at a charge of from five to eight ſhillings an acre, and is the moſt certain method of extirpating theſe animals [s].

Where they are very numerous, the plants are ſtripped in a few days, ſo that there is not time to ſave them by any means, unleſs the farmer is aware of their ravages; his only reſource then is to plough up the ground, and ſow again. If ſome patches have fared better than the main body of the piece, it is in vain to leave them: for they will only ſerve to ſupport the vermin, till the young plants get up to be devoured by them.

Setting out the plants with the hoe, when the caterpillar is upon them in force, is labour thrown away, and certain deſtruction to the crop.

It would be a prevention of the miſchief, if the inhabitants of the ſea coaſt would burn the flies on their arrival, when they are ſpent with their flight, and frequently may be taken up by ſhovel-fulls [t].

Another enemy to Turneps, as well as to the garden in general, to Flax, and to Wheat, *&c.* is the naked ſnail or *Slug*. This however is a trifling evil in compariſon with the others. Slugs abound moſt in wet ſeaſons, when the fly is leaſt prevalent, and chiefly on freſh ground, or bad fallows. The only remedy preſcribed for them is night rolling, when the dew is upon the ground [u].

The wire-worm or red-worm is alſo complained of as injurious to Turneps, particularly by thoſe who purſue the drill culture [x].

The grub is perhaps in itſelf not fatal, did not the rooks, in order to come at it, pull up not only the plants which are attacked, but thoſe alſo which are free from it, and thus clear them as they go.

There is alſo a diſeaſe to which Turneps are ſubject, called the *Anbury* or *Hanbery*. It is a large excreſcence, which forms itſelf below the bulb or apple; grows to the ſize of both the hands; and, when brought to maturity, becomes putrid, and ſmells very offenſively: it is irregular in its form, with excreſcencies, like races of ginger, hanging to it. The tops of thoſe Turneps which are much affected turn yellow, and flag with the heat of the ſun.

It is a common notion that this diſeaſe is cauſed by the ſoil's being tired of Turneps; that is, by their being ſown too often on the ſame land. This however is erroneous, for they have the *Anbury* on freſh land, which never bore Turneps before. It is more probable, that it is cauſed by ſome grub or inſect, that diverts the courſe of the ſap, by wounding the veſſels of the tap-root [y]. Marl is looked upon in Norfolk as a certain preventive of the *Anbury* [z].

The laſt enemy that I ſhall mention is ſevere *Froſt*, which uſually deſtroys the early ſown Turneps, and much injures the late ones. They are alſo difficult to get at in this ſituation, and do the ſtock but little good [a].

The only method of counteracting this evil, is to preſerve or ſtore up a certain quantity of Turneps, in caſe of froſt or a deep ſnow. This may be done by drawing them in dry weather, and when they have attained their full growth; topping and tailing them; and carting the roots into an adjoining new-made dry ditch, covering them with ſtraw, and protecting them with hurdles or faggots from the cattle; or ſtill better, by ſtacking them in the field with layers of ſtraw between, covered and thatched with ſtraw; either on the ground, or if the land will bear it, in beds or pits dug one or two feet deep or more, three yards wide, and of what length you want them. If ſtraw be ſcarce, old haulm or ſtubble will anſwer the purpoſe. Or elſe to carry them home, and pile them in ſmall ſtacks in a clean home paſture, or near the yard; or to houſe them where there is room, always ſcreening them with ſtraw, and putting ſome between the layers to abſorb the moiſture. This practice not only preſerves ſome Turneps from the rot, and furniſhes cattle and ſheep with feed in time of the greateſt diſtreſs; but prevents the crop from exhauſting and impoveriſhing the land, and gives time for preparing it for the ſucceeding crop of Barley [b].

After all, the provident farmer will not abſolutely depend upon his Turnep crop for feed late in the ſpring; but have in reſerve ſome Cabbages, Coleſeed, Rie, or winter Tares, according to his convenience and the nature of his land; not only to guard againſt failures in his Turnep crop, from froſt, *&c.* but to have ſome proviſion for the couples, by the time the lambs begin to feed, which will put them on much faſter than the beſt Turneps [c].

*Quantity.*

A ſquare perch of Turneps (ſixteen feet and a half) drilled in rows three feet apart, has been found to contain eighty-four roots, weighing ſeven hundred two quarters; which is ſixty tons to a ſtatute acre: eighty-four turneps, picked within fifteen yards of the above perch, weighed fifteen hundred, fifteen quarters, ſeventeen pounds; which is one hundred and twenty-five tons, twenty-nine hundred, twenty pounds to an acre. Two weighed each thirty-two pounds; and one was three feet eight inches in circumference [d]. But whoever calculates on ſuch a produce as this will find himſelf grievouſly miſtaken. A more moderate eſtimate is the following. An acre is 4840 ſquare yards or 43560 ſquare feet. Now if we reckon one Turnep of two pounds weight to every ſquare foot, we ſhall have forty-ſix tons upon an acre [e]. But even here we muſt make conſiderable abatements, for vacant ſpaces, deficient roots; and in the application for waſte, *&c.*

We are told indeed, that an acre twice hoed will, if the land be good, produce about fifty tons of Turneps [f]: and that the roots will average at ſix or even eight pounds. But ſuch crops are not general, and it is probable that the farmer has more frequently twenty, and fifteen or ſixteen, nay even ſo low as ten tons on an acre, than forty or fifty. Twenty cart loads, ſuch as three horſes uſually draw, is called a fair crop, and from thirty to forty a large one. An acre is a common allowance to a middling bullock, and ſuch a beaſt is eſtimated to conſume thirty loads of Turneps in ſix months; or according to others two hundred weight a day, with ſtraw; which is ſomewhat more than eighteen tons in ſix months. Eight ſheep are uſually allowed to an acre, and they are computed each to eat from ſixteen to twenty pounds a day; that is from about ten to thirteen tons in ſix months [g]. From ten to eighteen tons therefore is the ſuppoſed common crop of Turneps on an acre, according to this calculation; and we may conclude that more is ſeldom grown, except on very fine land, and with extraordinary exertions.

CABBAGE.

*Colewort, Cole* or *Kale.*

Coleworts are greens that never cloſe or cabbage, but always continue looſe and open.]

The common Colewort, or Dorſetſhire Kale, is now almoſt loſt near London, where the markets are uſually ſupplied with Cabbage plants, inſtead of it; theſe being tenderer, and more delicate in winter, are much more cultivated than the common Colewort, which is better able to reſiſt the cold in ſevere winters than thoſe, but is not near ſo delicate till

[s] Marſh. Norf. 2. p. 298. 291. Young's ann. 6. 195. & 2. 377. Kent's report on Norfolk.
[t] Marſh. Norf. 2. p. 297. 287.
[u] Marſh. midl. 2. p. 178. Young's ann. 10. p. 214. & 12. p. 336.
[x] Tranſ. ſoc. arts, vol. 10. for 1792. p. 59. 62.
[y] Marſh. Norf. 2. p. 33. Liſle's huſb. p. 239.
[z] Id. ibid. p. 35.
[a] Young's ann. vol. 11. p. 324, 327, 332.
[b] Young's ann. 7. p. 526. & 3. p. 131. Bath papers, 2. p. 289. Marſh. Norf. 2. p. 109. Kent's hints, p. 129.
[c] Macro, in Young's ann. 3. 303.
[d] Young's tour in Ireland, 1. 402.
[e] Bath papers, 2. 371.
[f] Ibid. 101.
[g] Young's ann. 3. p. 297. & 16. p. 93, &c.

pinched by froſt. And ſince the winters in England have been generally temperate of late years, the common Cabbage plants have conſtantly been cultivated by the gardeners near London, and ſold in the markets as Coleworts, which, if they are of the Sugar-loaf kind, are the ſweeteſt greens from december to april yet known.

The ſeeds ſhould be ſown in july, in an open ſpot of ground, and tranſplanted as ſoon as the leaves are two or three inches broad into rows a foot aſunder, and ſix inches diſtant in the rows. The rows may be drawn alternately for Coleworts, and the remainder left to cabbage.

To continue them for ſpring drawing, ſome ſeed ſhould again be ſown at the beginning of auguſt.

*Field Culture of Coleworts.*

Where farmers ſow Coleworts to feed their milch-cattle in the ſpring, when there is a ſcarcity of herbage, the common Colewort is to be preferred, as being ſo very hardy that no froſt will deſtroy it. The beſt method to cultivate this plant in the fields is, to ſow the ſeeds about the beginning of july, chooſing a moiſt ſeaſon, which will bring up the plants in about ten days or a fortnight; the quantity of ſeed for an acre of land is nine pounds: when the plants have got five or ſix leaves, they ſhould be hoed, as is practiſed for Turneps, cutting down all the weeds from amongſt the plants, and alſo thinning the plants where they are too thick; but they ſhould be kept thicker than Turneps, becauſe they are more in danger of being deſtroyed by the fly: this work ſhould be performed in dry weather, that the weeds may be killed; for if it ſhould prove moiſt ſoon after, the weeds will take root again, and render the work of little uſe. About ſix weeks after, the plants ſhould have a ſecond hoeing, which, if carefully performed in dry weather, will entirely deſtroy the weeds, and make the ground clean, ſo that they will require no farther culture. In the ſpring they may either be drawn up and carried out to feed the cattle, or they may be turned in to feed upon them as they ſtand; but the former method is to be preferred, becauſe there will be little waſte; whereas, when the cattle are turned in amongſt the plants, they will tread down and deſtroy more than they eat, eſpecially if they are not fenced off by hurdles.

The perennial Colewort is alſo little cultivated in the gardens near London at preſent. This is very hardy, and may be cultivated in the ſame manner as the former ſort. This will continue two years before it runs up to ſeed, and will afterwards produce many ſide ſhoots, and in poor land will continue three or four years; but in rich ſoils it will not laſt ſo long. This may be uſed as the former ſort, to feed cattle; for it is not ſo good for the table (unleſs in very ſevere froſt) as the plants which are now cultivated for that purpoſe.

*Early or Summer heading Cabbages.*

The Early and Sugar-loaf-Cabbages are commonly ſown for ſummer uſe, and are called by the gardeners about London michaelmas Cabbages. The ſeaſon for ſowing theſe is about the end of july, or beginning of auguſt, in an open ſpot of ground; and when the plants have got eight leaves, you muſt prick them into beds at about three inches diſtance every way, that the plants may grow ſtrong and ſhort ſhanked; and in the middle of october you ſhould plant them out for good; the diſtance that theſe require is, three feet row from row, and two feet and a half aſunder in the rows. The gardeners near London commonly plant theſe Cabbages upon the ſame ſpot of ground, where their winter Spinach is ſown; ſo that when the Spinach is cleared off in the ſpring, the ground will have a crop of Cabbages upon it; you muſt therefore clear off the Spinach juſt round each plant early in the ſpring, that with a hoe you may draw the earth up to the ſtem; and when all your Spinach is cleared off, which is commonly in the beginning of april, you muſt hoe down all the weeds, and draw up the earth again about your Cabbage plants.

In may, if your plants were of the early kind, they will turn in their leaves for cabbaging; at which time, the gardeners near London, in order to obtain them a little ſooner, tie in their leaves cloſe with a ſlender oſier-twig to blanch their middle; by which means, they have them at leaſt a fortnight ſooner than they could have if they were left untied.

The early Cabbage being the firſt, we ſhould chooſe (if for a gentleman's uſe) to plant the fewer of them and a greater quantity of the Sugar-loaf kind, which comes after them; for the early kind will not ſupply the kitchen long, generally cabbaging apace when they begin, and ſoon grow hard, and burſt open, but the Sugar-loaf kind is longer before it comes, and is as ſlow in its cabbaging; and, being of a hollow kind, will continue good for a long time. I have known a large quarter of ground, which was planted with this ſort of Cabbage for market uſe, which has afforded a ſupply for near three months together. This, though of ſingular ſervice to a gentleman's garden, is not ſo much for the advantage of the market gardener, who wiſhes to have his ground cleared ſooner, that he may have another crop of Celeri, Endive, *&c.* which is more to his purpoſe, that he may have as many crops in a year as poſſible.

Although I have adviſed planting out Cabbages finally in october, yet the Sugar-loaf ſort may be planted out in february, and will ſucceed as well as if planted earlier, with this difference only, that the plants will be later before they cabbage.

Some plants of the early ſort ſhould alſo be reſerved in ſome well-ſheltered ſpot, as a ſupply in caſe of a failure; for in mild winters many of the plants run to ſeed, eſpecially when ſown too early; and in ſevere winters they are often deſtroyed.

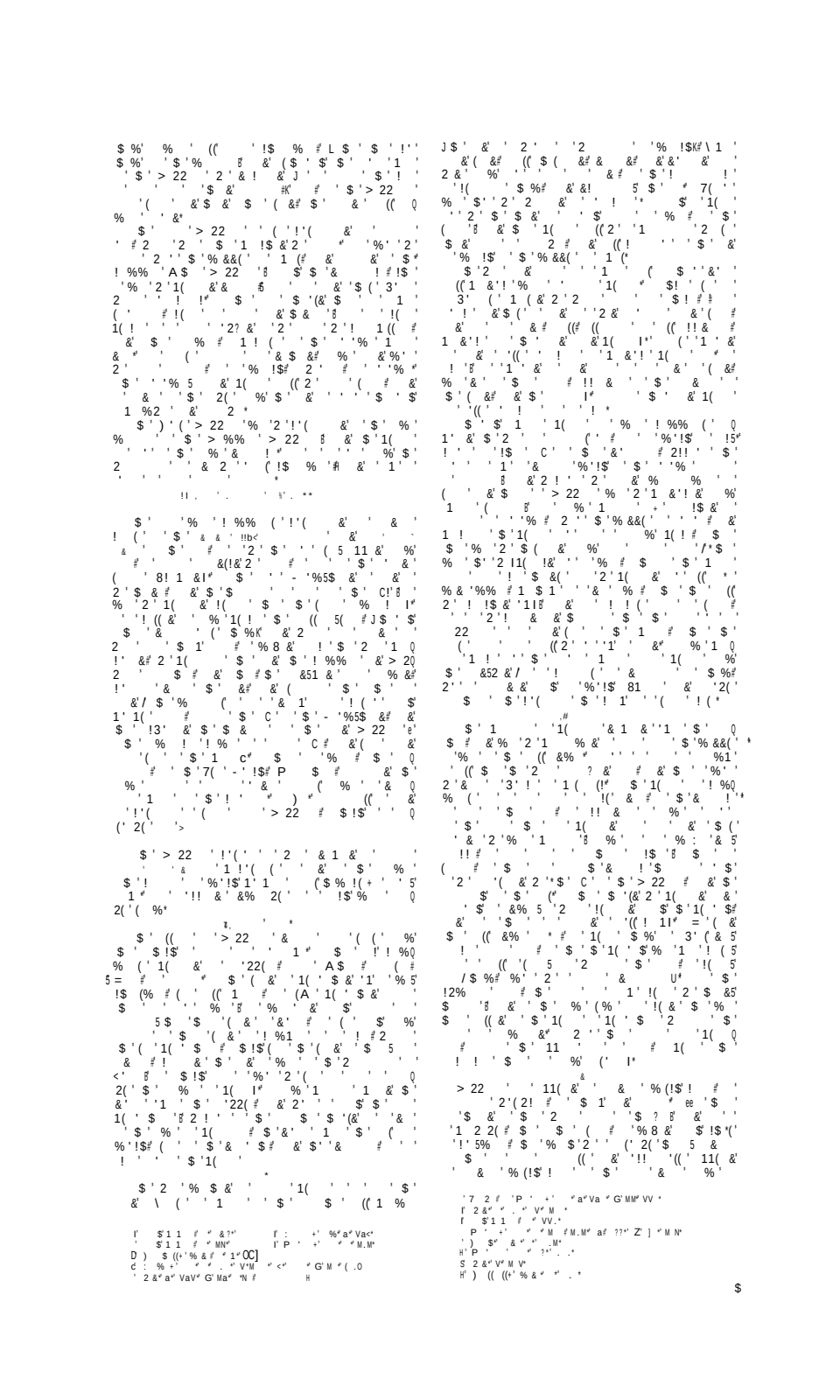
The Ruſſian Cabbage, muſt be ſown late in the ſpring, and managed as above directed; with this difference only, that it muſt be finally planted out ſooner, muſt have an open clear ſpot of ground, and requires much leſs room, being a very ſmall hard Cabbage. It will be fit for uſe in july or auguſt, but will not continue long before it breaks, and runs up to ſeed. The way to have this ſort good is to procure freſh ſeeds every year from abroad, for it ſoon degenerates in England.

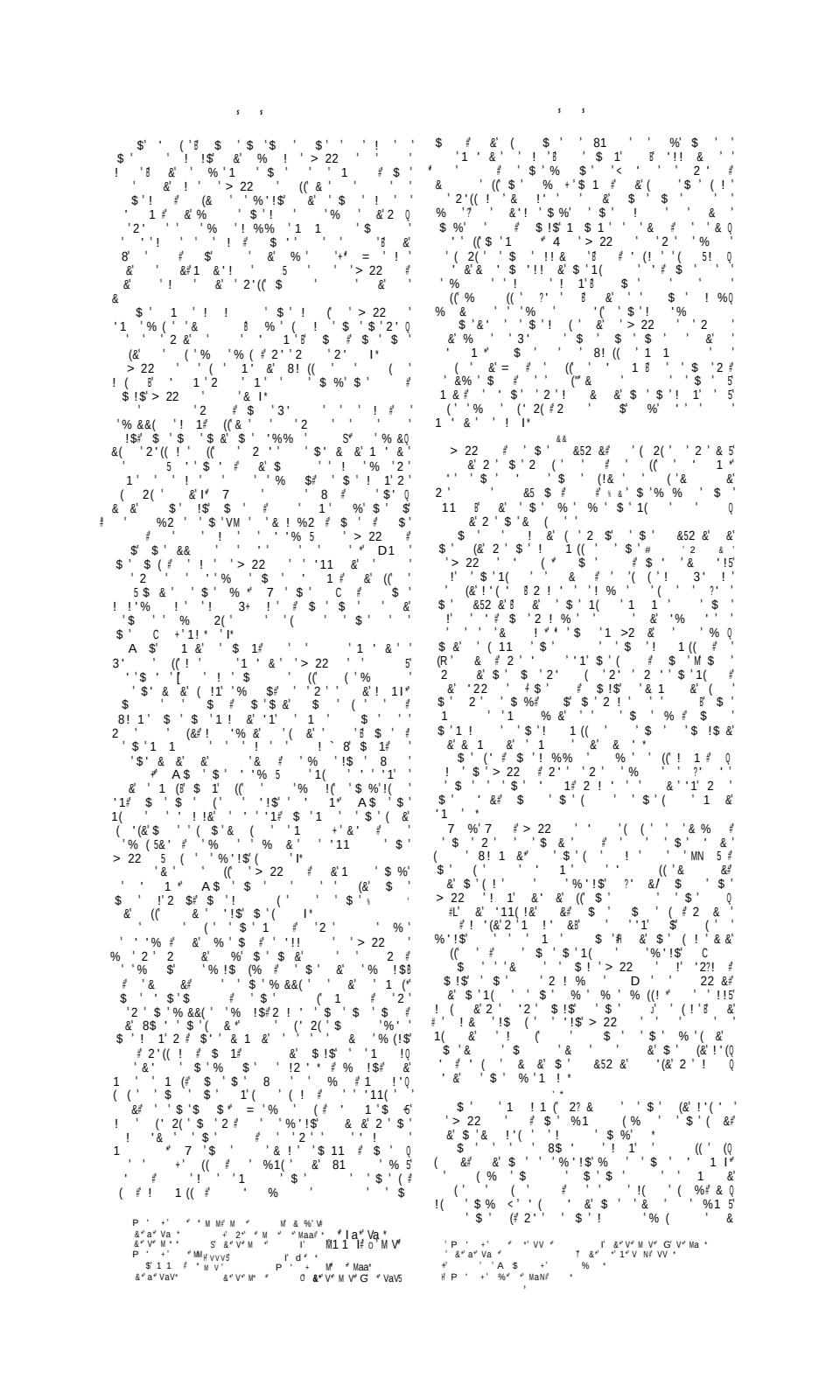
*Late or Winter heading Cabbages.*

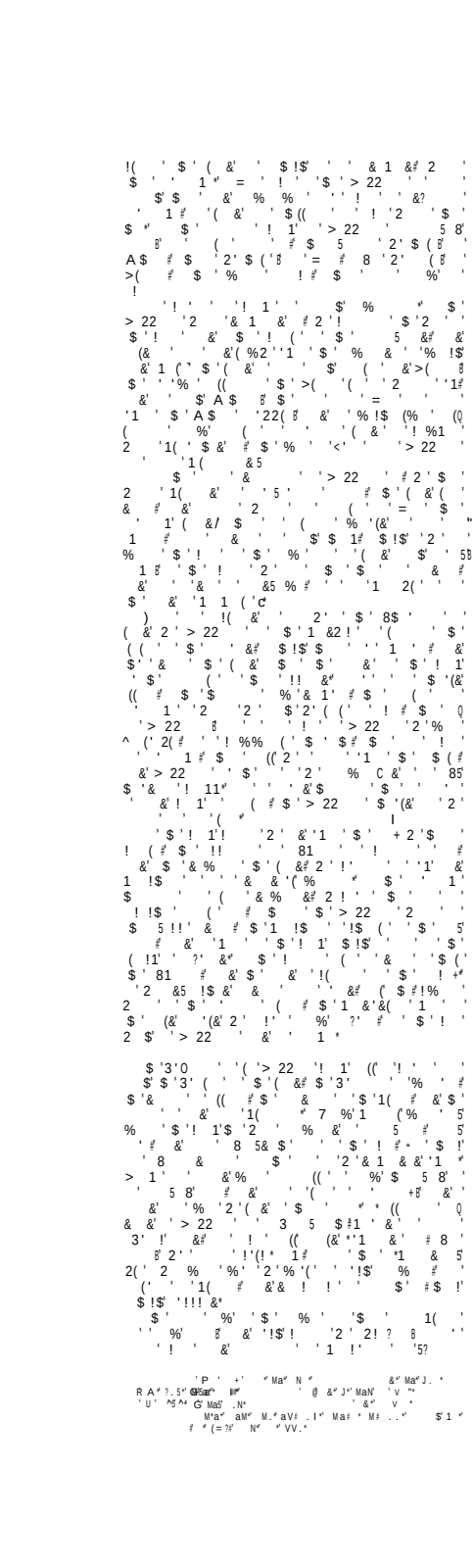
The common white, red, flat, and long-ſided Cabbages are chiefly cultivated for winter uſe: the ſeeds of theſe ſorts muſt be ſown the end of march, or beginning of april, in beds of good freſh earth; and in may, when the young plants will have about eight leaves, they ſhould be pricked out into ſhady borders, about three inches ſquare, that they may acquire ſtrength, and to prevent their growing long-ſhanked.

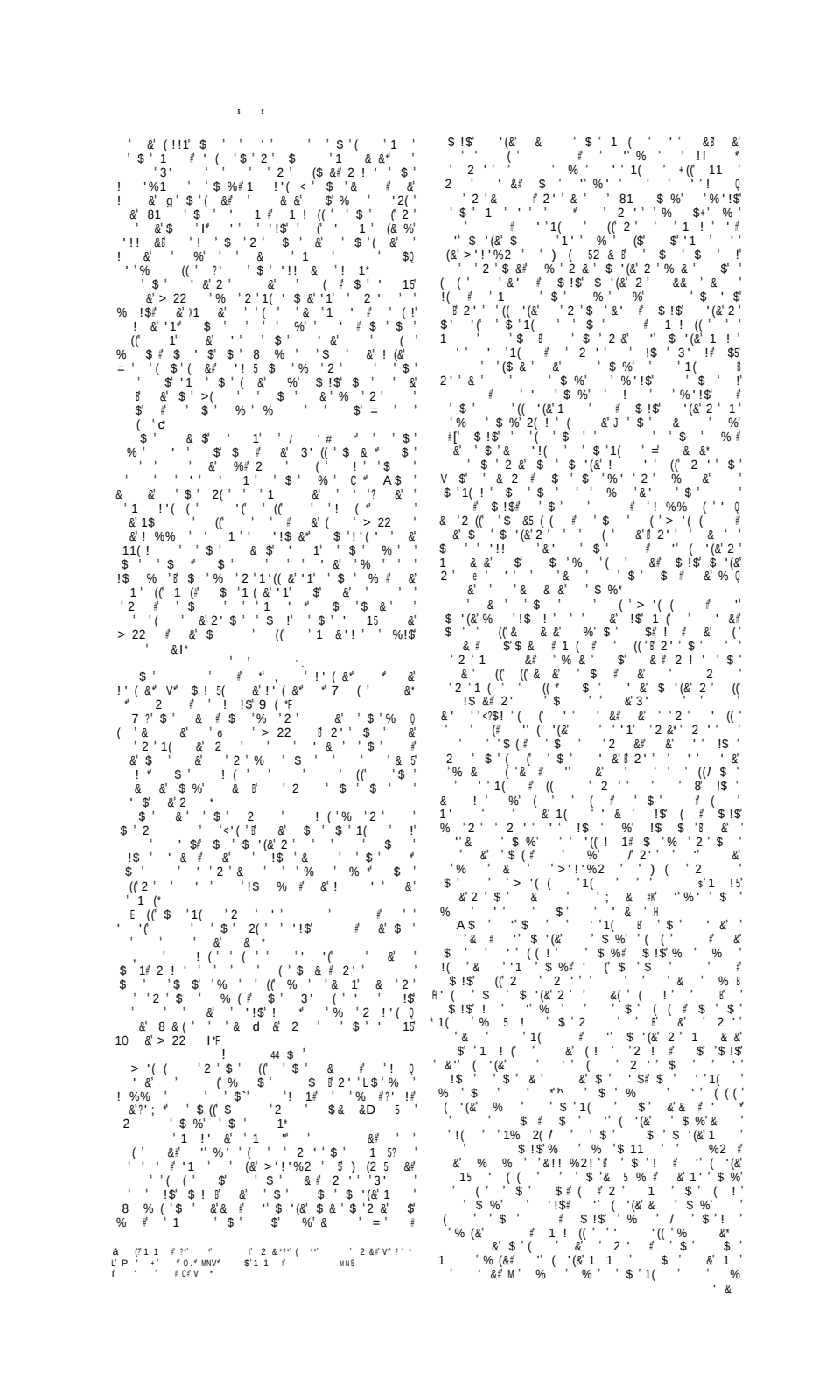
About the beginning of june you muſt tranſplant them out, where they are to remain for good (which in the kitchen-gardens near London, is commonly between Cauliflowers, Artichokes, *&c.* at about two feet and a half diſtance in the rows;) but if they are planted for a full crop in a clear ſpot of ground, the diſtance from row to row ſhould be three feet and a half, and in the rows two feet and a half aſunder: if the ſeaſon ſhould prove dry when they are tranſplanted out, they muſt be watered every other evening, until they have taken freſh root; and afterwards, as the plants advance in height, the earth ſhould be drawn about their ſtems with a hoe, which will keep the earth moiſt about their roots, and greatly ſtrengthen the plants. Weeds, if ſuffered to grow among them, will draw them up tall, and often ſpoil them.

Some of theſe Cabbages will be fit for uſe ſoon after michaelmas, and will continue until the end of february, if they are not deſtroyed by bad weather; to prevent which, the gardeners near London pull up their Cabbages in november, and trench their ground up in ridges, laying their Cabbages againſt their ridges as cloſe as poſſible on one ſide, burying their ſtems in the ground: in this manner they let









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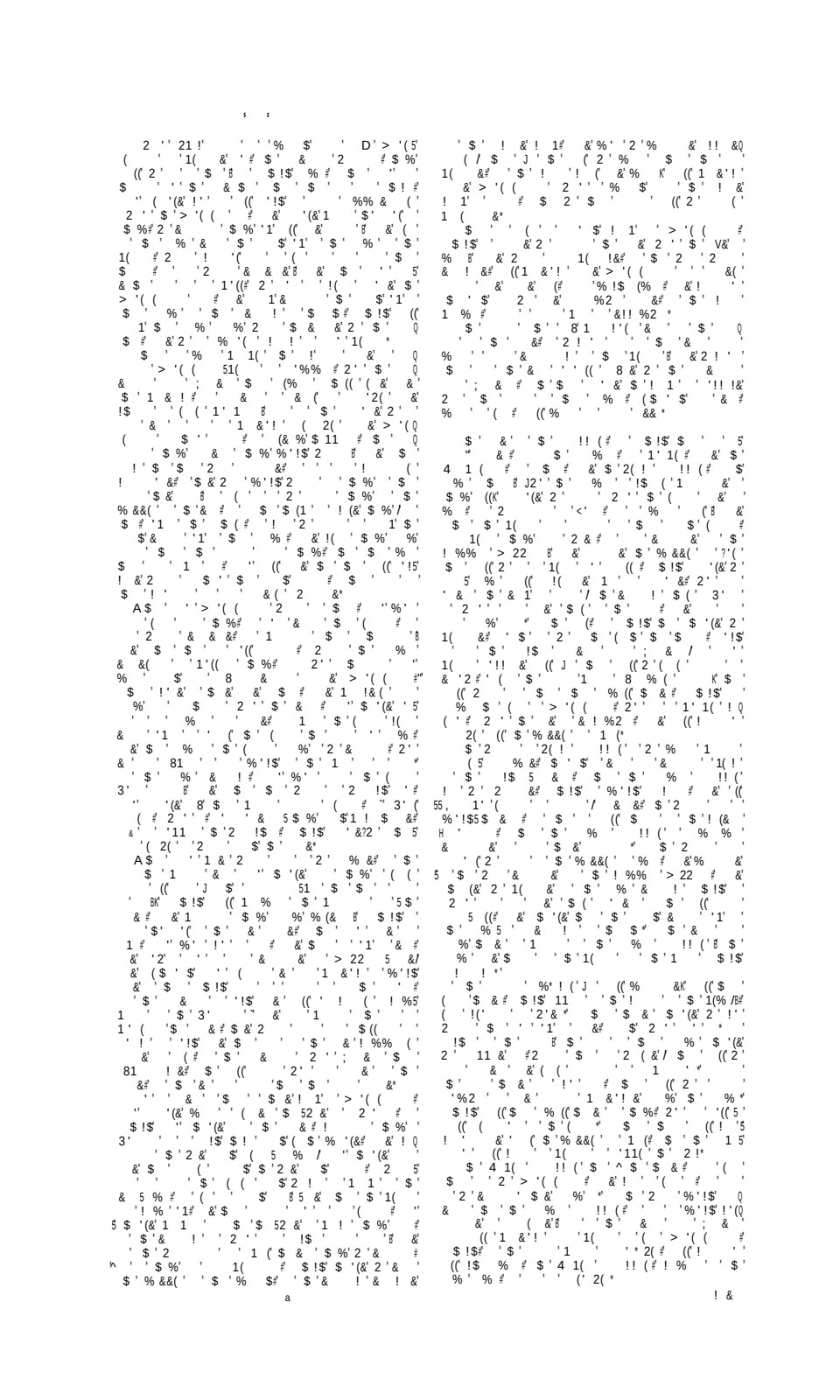

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Beſides this firſt crop of Broccoli (which is uſually ſown the end of may,) it will be proper to ſow another crop the beginning of july, which will come in to ſupply the table the latter end of march, and the beginning of april, and being very young, will be extremely tender and ſweet.

In order to ſave good ſeeds of this kind of Broccoli in England, you ſhould reſerve a few of the largeſt heads of the firſt crop, which ſhould be let remain to run up to ſeed, and all the under ſhoots ſhould be conſtantly ſtripped off, leaving only the main ſtem to flower and ſeed. If this be duly obſerved, and no other ſort of Cabbage permitted to ſeed near them, the ſeeds will be as good as thoſe procured from abroad, and the ſort may be preſerved in perfection many years.

The manner of preparing the Naples Broccoli for the table is this: when your heads are grown to their full bigneſs (as may be eaſily known by their dividing, and beginning to run up,) then you ſhould cut them off, with about four inches of the tender ſtem to them; then ſtrip off the outer ſkin of the ſtem, and after having waſhed them, boil them in a clean linen cloth as is practiſed for Cauliflowers, and, if they are of a right kind, they will be tenderer than any Cauliflowers, though very like them in taſte.

[The White or Neapolitan Broccoli may alſo be ſown in the beginning or middle of february, upon a wall border having an eaſtern aſpect. So ſoon as the plants have got five leaves, tranſplant them into a more ſoutherly aſpect, upon a very good rich ſoil, where they may remain. The reaſon of this tranſplanting is, that they may thereby acquire more fibres, whereby they ſuck more nouriſhment from the ſoil, than thoſe plants which are continued in their ſeed-beds: for by every tranſplantation they acquire a new ſet of fibres, and of conſequence, if they are twice or thrice tranſplanted in nurſery-beds, they are much better in their productions than plants of the ſame kind, which have not been tranſplanted.

In order to have Broccoli produce well, tranſplant it into the alleys of your Onion, Carrot, &c. beds, the beginning of july; preſerving it from ſnails, and hilling it up, it will produce moſt noble heads in january and february, and will furniſh the table until it is quite over. By thus ſowing very early in the ſpring, the moſt forward will ſucceed the autumnal-ſown crops, by which means there will be a conſtant ſucceſſion.

The Roman or Blue Broccoli ſhould be ſown by the 10th of march; when the plants have five leaves tranſplant them into nurſery-beds at three inches diſtance; at the end of june plant them out into a good ſoil in rows three feet diſtant, and two feet between the plants: hill, dig, and keep them clear from weeds; and in november they will ſhow their heads: theſe muſt be cut off, except in ſevere froſt, that their ſide ſprouts may advance in the ſpring; for theſe will be fit for ſervice long after the other ſorts are quite gone. All the varieties of Broccoli proſper beſt in a rich loamy ſoil, not much expoſed to the ſun; but they muſt never be planted under the drip of trees[f].]

*Saving Seeds.*

The beſt method to ſave the ſeeds of all the beſt ſorts of Cabbages is, about the end of november to make choice of ſome of your beſt Cabbages, which you ſhould pull up, and carry to ſome ſhed, or other covered place, where you ſhould hang them up for three or four days by their ſtalks, that the water may drain from between their leaves; then plant them in ſome border, under a hedge or pale, quite down to the middle of the Cabbage, leaving only the upper part of the Cabbage above ground, obſerving to raiſe the earth about it, ſo that it may ſtand a little above the level of the ground; but if the ground be wet, it will require to be raiſed pretty much above the ſurface.

[f] Juſtice Brit. Gard. director, p. 187.

If the winter ſhould prove very hard, you muſt lay a little ſtraw or Peaſe-haulm lightly upon the Cabbages, to ſecure them from the froſt, taking it off as often as the weather proves mild, leſt by keeping them too cloſe they ſhould rot. In the ſpring of the year they will ſhoot out ſtrongly, and divide into a great number of ſmall branches: you muſt therefore ſupport their ſtems, to prevent their being broken off by the wind; and if the weather ſhould be very hot and dry when they are in flower, you ſhould refreſh them with water once a week all over the branches, which will greatly promote their ſeeding, and preſerve them from mildew.

When the pods begin to change brown, you will do well to cut off the extreme part of every ſhoot with the pods, which will ſtrengthen your ſeeds; for it is generally obſerved, that thoſe ſeeds which grow near the top of the ſhoots, are very ſubject to run to ſeed before they cabbage; ſo that by this there will be no loſs, but a great advantage, eſpecially if you have more regard to the quality than to the quantity of the ſeeds, which indeed is not always the caſe, when it is intended for ſale; but thoſe who ſave it for their own uſe, will be careful to have it good.

When your ſeeds begin to ripen, you muſt be particularly careful, that the birds do not deſtroy it; for they are very fond of theſe ſeeds. In order to prevent their miſchief, ſome uſe old nets, which they throw over their ſeeds, to prevent their getting to it: but this will not always do, for unleſs the nets are very ſtrong, they will force their way through them, as I have often ſeen; but the beſt method I know, is to get a quantity of birdlime, and daub over a parcel of ſlender twigs, which ſhould be faſtened at each end to ſtronger ſticks, and placed near the upper part of the ſeed, in different places, ſo that the birds may alight upon them, by which means they will be faſtened thereto, where you muſt let them remain a conſiderable time, if they cannot get off themſelves: and although there ſhould be but few birds caught, yet it will ſufficiently terrify the reſt, that they will not come to that place again for a conſiderable time after, as I have experienced.

When your ſeed is fully ripe, you muſt cut it off: and, after drying, threſh it out, and preſerve it in bags for uſe.

But in planting Cabbages for ſeed, I would adviſe never to plant more than one ſort in a place, or near one another: as for example, never plant red and white Cabbages near each other, nor Savoy with either white or red Cabbages; for I am very certain they will produce a mixture of ſorts; and it is wholly owing to this neglect, that the gardeners rarely ſave any good red Cabbage-ſeed in England, but are obliged to procure freſh ſeeds from abroad, as ſuppoſing the ſoil or climate of England alters them from red to white, and of a mixed kind between both; whereas, if they would plant red Cabbages by themſelves for ſeeds, and not ſuffer any other to be near them, they might continue the kind as good in England, as in any other part of the world; for in the Dutch gardens, from whence the beſt ſeeds of red Cabbages are procured, they cultivate no other ſort.

10. This is an open Colewort. It is an annual plant, and if ſown in april, will flower in july and perfect its ſeeds in october. Even when it has been frozen, it is much worſe than the common Colewort, and therefore not worth propagating.

13. When this is propagated for ſalads, the ſeeds ſhould be ſown in drills, in the ſame manner as is practiſed for other ſmall ſalad herbs, but if it be not eaten young, it will be too ſtrong for moſt palates. When ſown in ſummer, the plants ſoon run up to ſeed, and are too rank. When cultivated for the ſeed, which is ſometimes uſed in medicine, it ſhould be ſown in march on an open ſpot of ground; and when the plants have put out four leaves, they ſhould be hoed to three or four inches diſtance; in five or ſix weeks they ſhould have a ſecond hoeing. When the ſeeds are ripe, the plants ſhould be

drawn up, and ſpread upon a cloth in the ſun two or three days to dry; when the ſeeds may be beaten out of the pods, and put up for uſe.

The wild Rockets may be cultivated, by ſowing the ſeeds in march or april. When the plants come up, they require no other culture but to thin them, and keep them clear from weeds.

[BRASSICA. See *Arabis*, *Arum*, *Turritis*.

——— marina. See *Convolvulus Soldanella* and *Crambe*.

——— monenſis. See *Siſymbrium*.

——— ſpinoſa. See *Bunias*.

BRATHYS. (Βραθυς or Βραδυ, *the name of a plant in Dioſcorides.*)

*Mutis. Lin. ſuppl. n.* 1402. *p.* 43. *Lin. gen. Schreb. n.* 937. *Juſſ.* 254.*

Claſſ. 13. 5. Polyandria Pentagynia.

Nat. order of *Rotaceæ*. *Hyperica* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved: *leaflets* lanceolate, acute, permanent.

COR. *Petals* five, lanceolate, twice as long as the calyx.

STAM. *Filaments* many, more than twenty, capillary, the length of the calyx. *Authers* twin.

PIST. *Germ* ſuperior, ovate. *Styles* five, patulous, filiform. *Stigmas* capitate.

PER. *Capſule* ovate, with five little ſwellings, one-celled.

SEEDS very many, roundiſh.

ESSENTIAL CHARACTER.

*Cal.* five-leaved. *Pet.* five. *Neft.* none. *Capſ.* one-celled, many-ſeeded.

SPECIES.

1. Brathys juniperina.
*Lin. ſyſt.* 506. *ſuppl.* 268.

DESCRIPTION, *&c.*

This is a ſhrub of a habit between Heath and Juniper, very branching, and upright, the branches covered with leaves. Leaves oppoſite, very much crowded, acerоſe, an inch long, acute, unarmed, evergreen. Flowers terminating the branches, ſeveral together, ſeſſile. Found in New Granada, by Mutis*.

BREAD-FRUIT TREE. See *Artocarpus*.

BREAD-NUT TREE. See *Broſimum*.]

[BREYNIA. (*So named by Forſter, in memory of Jac. Breynius, and his ſon Jac. Phil. Breynius, M. D. both celebrated botaniſts.*)

*Forſt. gen. t.* 73. *Lin. gen. Schreb. n.* 1605.

Claſſ. 23. 2. Polygamia Dioecia.

GENERIC CHARACTER.

* *Hermaphrodite Flowers.*

CAL. *Perianth* one-leafed, turbinate, minute, ſix-parted: *parts* concave, blunt, cloſely converging, depreſſed flat at the end, ſo that it is pervious only by a ſmall hole.

COR. none.

STAM. *Filaments* none. *Authers* five, linear, upright, faſtened longitudinally to the ſtyle, approximating.

PIST. *Germ* very ſmall. *Style* cylindric, the length of the calyx. *Stigma* blunt.

PER. *Berry* dry, globular, three-celled, propped on the perianth, now become three times its former ſize, and ſpreading very much: the ſegments orbiculate, and nearly equal.

SEEDS two, convex at the back, flat on the ſides.

* *Male flowers.*

CAL. *Perianth* one-leafed, five-parted: *leaflets* roundiſh, concave, almoſt equal.

COR. none. *Neftary* five glands, ſubpedicelled, alternate with the ſtamens.

STAM. *Filaments* five, very ſhort. *Authers* roundiſh, the length of the calyx.

* *Female flowers.*

CAL. & COR. as in the Male.

PIST. *Germ.* globoſe. *Style* none. *Stigmas* five, obcordate, reſembling petals.

PER. *Capſule* five-celled.

SEEDS ſolitary, ſubtriquetrous.

* Linn. ſuppl.

ESSENTIAL CHARACTER.

*Cal.* one-leafed. *Cor.* none.

HERM. *Cal.* ſix-parted. *Authers* five, linear, faſtened to the ſtyle. *Berry* three-celled. *Seeds* two.

MALE. *Cal.* five-parted. *Filaments* five. *Authers* roundiſh.

FEM. *Stigmas* five, obcordate, petaloid, without any ſtyle. *Capſ.* five-celled. *Seed* ſolitary.

SPECIES.

1. Breynia diſticha.
*Forſt. fl. auſtral. n.* 40.
Native of New Caledonia, and the iſle of Tanna, in the South Seas.]

BREYNIA. See *Capparis* [and *Seriphium*.

BREYNIÆ affinis. See *Capparis*.

BRIONY. See *Bryonia*.

BRITANNICA. See *Rumex*.]

[BRIZA. (Βριζω, *to nod or ſleep.*)

*Lin. gen. n.* 84. *Reich. n.* 90. *Schreb. n.* 115. *Gærtn. t.* 1.

Claſſ. 3. 2. Triandria Digynia.

Nat. order of *Gramina* or *Graſſes*.

GENERIC CHARACTER.

CAL. *Glume* many-flowered, bivalve, ſpreading, collecting the flowers into a heart-ſhaped diſtich ſpike: *valves* heart-ſhaped, concave, equal, obtuſe.

COR. bivalve: *lower valve* the ſize and figure of the calyx; *upper* very ſmall, flat, roundiſh, incloſing the body of the other. *Neftary* two-leaved; *leaflets* linear, crenulate.

STAM. *Filaments* three, capillary. *Authers* oblong.

PIST. *Germ* roundiſh. *Styles* two, capillary, recurved. *Stigmas* plumoſe.

PER. none. *Corolla* unchanged contains the ſeed, gapes, and drops it.

SEED one, roundiſh, compreſſed, very ſmall.

ESSENTIAL CHARACTER.

*Cal.* bivalve, many-flowered. *Spikelet* diſtich with heart-ſhaped obtuſe valves, the lower of which is minute.

SPECIES.

1. Briza minor. *Small quaking-graſs.*
*Lin. ſpec.* 102. *Reich.* 193. *hort. cliff.* 23. *Huds. angl.* 38. *With.* 92. *Villars dauph.* 2. 137.
Poa. *Hall. helv. n.* 1449.
Gr. tremulum, &c. *Bauh. pin.* 2. *n.* 4. *prodr.* 4. *n.* 9. *theatr.* 24. *Mor. hiſt.* 3. 203. *ſ.* 8. *t.* 6. *f.* 47. *Raii hiſt.* 1274. *n.* 1. *ſyn.* 412. *n.* 2. *Schcucb. gram.* 205. *t.* 4. *f.* 9. *Park.* 1165. 5. *Barr. ic.* 16. *Lob. obſ.* 12.
*Spikelets triangular, calyx longer than the ſeven floſcules.*
2. Briza virens. *Green quaking-graſs.*
*Lin. ſpec.* 103. *Reich.* 194. *Allion. pedem. n.* 2216.
Gr. paniculatum minus, locuſtis magnis tremulis. *Tourn. inſt.* 523.
*Spikelets ovate, calyx equal to the ſeven floſcules.*
3. Briza media. *Middle, or common quaking-graſs, Cow-quakes, Shakers, Ladies-hair, Bird's-eyes.*
*Lin. ſpec.* 103. *Reich.* 194. *hort. cliff.* 23. *ſuec. n.* 86. *Huds. angl.* 38. *With.* 92. *Relh. cantabr. n.* 73. *Fl. ruſſ. t.* 39. *Pollich pal. n.* 97. *Neck. gallob.* 56. *Leers herborn. n.* 64. *t.* 7. *f.* 2. *Scop. carn. n.* 109. *Fl. dan. t.* 258. *Krock. ſilef. n.* 146. *Villars dauph.* 137.
Poa. *Hall. helv. n.* 1448.
Gr. tremulum. *Baub. hiſt.* 2. 469. *Mor. ſ.* 45. 46. *Monti* 45. *f.* 39. *Schcucb. gram.* 204. *t.* 4. *f.* 8, 9. *Raii hiſt.* 1274. *n.* 3. *Park.* 1165. 2.
Phalaris pratenſis. *Ger.* 80. 2. *emac.* 86. 2.
*Spikelets ovate, calyx ſhorter than the ſeven floſcules.*]
4. Briza maxima. *Greateſt quaking-graſs.*
*Lin. ſpec.* 103. *ſyſt.* 115. *Reich.* 194. *hort. cliff.* 23. *upſ.* 20. *Jacqu. obſ.* 3. 10. *t.* 60. *Gærtn. fruct.* 1. *p.* 4. *t.* 1.
Gr. trem. maximum. *Baub. pin.* 2. *prodr.* 5. *t.* 1. *Baub. hiſt.* 2. 470. *Mor. ſ.* 48. *Raii hiſt.* 1274. *Park.* 1166. *n.* 5. *Schcucb. gram.* 202. *t.* 4. *f.* 7. *Mill. dict. n.* 7.
Phalaris pratenſis altera. *Ger. emac.* 87. *n.* 3.
*Spikelets heart-ſhaped, floſcules* 17.

[5. Briza Eragroſtis. *Branched quaking-graſs*, or *Love-graſs*.
*Lin. ſpec.* 103. *ſyſt.* 116. *Reich.* 195. *Scop. carn. n.* 110. *Schreb.* 2. 83. *t.* 39. *Krock. ſilef. n.* 147. *t.* 27. *Villars dauph.* 2. 136.
Poa. *Hall. helv. n.* 1450.
Uniola. *Gron. virg.* 136.
Gr. paniculis elegantiſſimis. *Bauh. pin.* 2. *theat.* 25. *Scheuch. gram.* 194. *t.* 4. *f.* 4. *Mor.* 204. *t.* 6. *f.* 52. (conf. f. 53.) *Rati hiſt.* 1274. *n.* 5. *Barr. rar. t.* 43, 44 & 744. *Ger. emac.* 9. *f.* 2.
*Spikelets lanceolate, floſcules* 20. (15 to 20 and more.)
6. Briza monſpeſſulana. *Montpelier quaking-graſs*.
*Allion. pedem. n.* 2220. *Gouan. hort. n.* 1.
Gr. trem. minus panic. magna. *Bot. mont.* 113.
*Spike nodding ſimple, ſpikelets alternate pedunculed ſub-ſolitary ovate, calyx five-flowered.*

DESCRIPTIONS, *&c.*

1. The Small Quaking Graſs is annual; at leaſt it is ſo marked by Linneus and Villars: by Hudſon and in the Kew catalogue it is marked as perennial. The culms are about a foot and half in height; and the panicles are very much branched. Dr. Withering affirms, that Caſpar Bauhin's plant is only a ſmaller ſpecimen of *Brizæ mediæ*; and Haller ſays, that he never ſaw a different ſpecies from that in Switzerland. That however which was ſent him from warmer climates he deſcribes as low, with leaves leſs than a line in breadth, a ſparſe panicle, with long ſlender pedicels, the ſpikelets ſmaller, inclining to purple, the glumes of the calyx ovate, hollow, of the ſame length with thoſe of the corolla, and having five or ſix floſcules together. Native of Germany, Switzerland, the South of France, Italy, and Britain. With us it was firſt obſerved by Dr. Sherard, in the iſland of Jerſey, and ſince near Bath by Mr. Alchorne. It flowers from june to auguſt.

2. This is very like the common ſort (*n.* 3.), but the leaves are twice as broad, flatter, and run down by an acute ſtrap. The panicle is very like that, but more copious, green not purple, with the diviſions more branched and divaricate, having callous knots depreſſing them at the baſe. The flowers are rather ſmaller, and readily fall off when handled. It is an annual graſs, native of the Levant, Spain[a], and the county of Nice; flowering in july. Introduced in 1787, by Mr. Zier[b].

3. Root perennial. Culm upright, ſix or ſeven inches high in a dry ſoil, but in wet boggy places, two or three feet in height; having four or five knots on it, three of which are near the root. Leaves from two to three or four inches in length, and a line or a line and half in breadth; the upper one forms a ſheath for the panicle, which continues a long time within it. The panicle is handſome, ſpreads very much when in flower, and has two ſpikelets on each branch, placed on ſuch long ſlender pedicels, as to ſhake with the leaſt air or motion: each ſpikelet is compoſed of ſeven, eight, or nine florets, is heart-ſhaped, flatted, ſhining, ſmooth, varying in colour, uſually variegated with green, white and purple, but ſometimes entirely white. The ſmaller glume of the corolla is ſlightly emarginate.

This beautiful graſs is very common in paſtures, eſpecially dry ones, in moſt parts of Europe, and is eaſily diſtinguiſhed by the continual ſhaking of the ſpikelets. Hence moſt of its common Engliſh names, as well as that by which it was known among old authors, *Gramen tremulum*. The French call theſe Quaking Graſſes *Amourettes*. It flowers from may to july.

Cattle eat it, both green, and made into hay with other graſſes, but it has no peculiar excellence that we are acquainted with, nor has it ever been cultivated ſeparately. Indeed it furniſhes very little food, and generally indicates a poverty of ſoil.]

4. Great Quaking Graſs has an annual root, ſending up many broad hairy leaves, between which ariſe ſlender ſtiff ſtalks, from a foot to near two feet high, dividing at top into a large looſe panicle; [which is rather a raceme, than a panicle[c]. It is a native of the South of Europe, and was cultivated here in 1633[d].

5. Root annual. Culms decumbent at bottom, very ſmooth, round, finely ſtreaked, from a ſpan to a foot in height; they have ſeveral joints towards the baſe, tinged ſlightly with red. Sheaths ſmooth, very finely ſtreaked, where the ligule or ſtrap is crowned with very ſlender white hairs. Leaves ſmooth, except that they are roughiſh about the edge, as may be perceived by drawing the fingers along them backwards; they are of a bright green, have five nerves, and cover only the lower part of the culm. Panicle at firſt contracted, but afterwards diffuſed, a ſpan in length, the loweſt pedicels largeſt, the uppermoſt ſmalleſt, decreaſing proportionably, alternate, ſtiff; hence the ſpikelets are upright and divaricate; they are hoary or ſilvery, perfectly diſtich, compreſſed, compact, and have eighteen or twenty florets in each. Valves of the calyx lanceolate, ſwelling, ſmaller than thoſe of the corolla. Outer valve of the corolla concave, pellucid, with a nerve running along the middle, and two along the edge[e]. This laſt character is ſtriking, and may ſerve to diſtinguiſh this ſpecies from *Poa Eragroſtis*, (Schreb. t. 38.) with which otherwiſe it may eaſily be confounded[f]. The number of flowers varies; for in ſpecimens from Auſtria Scopoli obſerved fifteen; in thoſe from Carniola twenty; and in Italian ſpecimens more.

This graſs varies much; being commonly ſmall and decumbent, but ſometimes riſing to the height of ſeveral feet, at others of a middling ſize, with longer and more contracted ſpikelets[g].

Native of the South of Europe. Ray firſt remarked it about Frankfort, and afterwards commonly through Germany, Italy, and the South of France[h]. It flowers in july and auguſt.

Johnſon calls it Fern-graſs, and ſays that the white tops are gathered where they grow naturally to beautify garlands[i]. It was introduced in 1776, by Monſ. Thouin[k].]

PROPAGATION AND CULTURE.

If the ſeeds of theſe be permitted to ſcatter, or elſe be ſown in the autumn, the plants will come up ſtronger, and flower much earlier, than when they are ſown in the ſpring.

BROCCOLI. See *Braſſica*.

BROME GRASS. See *Bromus*.

BROMELIA. (*In memory of Olaus Bromel, a Swede, author of Lupulogia.*" *Stockh.* 1687. 12°. *and Chloris Gothica*, 1694. 8°.)
*Lin. gen. n.* 395. *Reich.* 427. *Schreb.* 540. *Juſſ.* 50. *Plum.* 8. Pinguin. *Dill. elth.* 240. Ananas. *Tournef.* 426, 427, 428. *Mill. dict. Gartn. t.* 11. Karatas. *Plum.* 33. *Mill. dict.*
Claſſ. 6. 1. Hexandria Monogynia.
Nat. order of *Coronariæ*. *Bromeliæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* three-cornered ſmall, ſuperior, permanent; diviſions three, ovate.
COR. *Petals* three, narrow-lanceolate, erect, longer than the calyx. *Nectary* faſtened to each petal above the baſe, converging.
STAM. *Filaments* ſix, ſubulate, ſhorter than the corolla, inſerted into the receptacle. *Anthers* erect, ſagittate.
PIST. *Germ* inferior. *Style* ſimple, filiform, the length of the ſtamens. *Stigma* obtuſe, trifid.
PER. *Berry* roundiſh, umbilicate, one or three-celled.
SEEDS numerous, incumbent, ſomewhat oblong, obtuſe.

ESSENTIAL CHARACTER.

*Cal.* trifid, ſuperior. *Pet.* three, and a nectareous ſcale at the baſe of each. *Berry* three-celled.

[a] Linn. & Jacq. [b] Hort. kew. from Ger. emac. [c] Krock. ſilef. [d] Villars. [e] Idem. [f] Hiſt. 1275. [g] Ger. emac. [h] Hort. kew.

SPECIES.

1. Bromelia Ananas. *Ananas* or *Pineapple.*
*Lin. ſpec.* 408. *Reich.* 2. 6. *hort. cliff.* 127. *upſ.* 73. *Lour. cochinch.* 192. *Raii hiſt.* 1332. 1. *Ger. emac.* 1550, 1552. *n.* 15. *Park.* 1626. *Mor. hiſt.* 3. 169. *ſ.* 7. *t.* 37. *f.* 1. *laſt row.*

α. Ananas ovata. *Mill. dict. n.* 1. *Queen Pine.*
*Comm. hort.* 1. 109. *t.* 57. *Trew. Ehret. t.* 2. *Blackw. t.* 567. *Sabb. hort.* 1. *t.* 72. *Plenck, ic. t.* 249.
Carduus braſilianus, fol. aloes. *Bauh. pin.* 384.
Anaſſa. *Rumph. amb.* 5. 227. *t.* 81.
Kapa-Tajakka. *Rheed. mal.* 11. 1. *t.* 1, 2.

β. A. pyramidalis. *Mill. dict. n.* 2. *Sugar-loaf Pine.*
A. acul. fr. conico, carne aurea. *Plum. ſpec.* 20.—fr. pyramidato, carne aurea. *Tourn. inſt.* 653. *Blackw. t.* 568.

γ. A lucida. *Mill. dict. n.* 4. *King Pine.*
A. lucide virens, fol. vix. ſerrato. *Dill. elth.* 25. *t.* 21. *f.* 23, 24.
A. non acul. Pitta dictus. *Plum. ſpec.* 20.

δ. A. glabra. *Mill. dict. n.* 3. *Smooth Pine.*
*Boerh. ludgb.* 2. 83.

ε. A. ſerotina. *Mill. dict. n.* 5. *Late Pine.*

ζ. A viridis. *Mill. dict. n.* 6. *Green Pine.*
*Leaves ciliate-ſpiny mucronate, ſpike comoſe.*

2. Bromelia Pinguin. *Pinguin* or *broad-leaved wild Ananas.*
*Lin. ſpec.* 408. *ſyſt.* 313. *Reich.* 2. 6. *hort. cliff.* 129. *Jacqu. amer.* 91. *ed.* 2. *pict.* 47. *Swartz obſ.* 120. *Trew. Ehr. t.* 51. *Brown. jam.* 193. *n.* 4. *Raii hiſt.* 1333. 2.
Karatas Penguin. *Mill. dict.*
Pinguin. *Dill. elth.* 320. *t.* 240. *f.* 311.
A. amer. ſylveſtris altera minor. *Plak. mant.* 29. *t.* 258. *f.* 4.
*Leaves ciliate-ſpiny mucronate, raceme terminal.*

[3. Bromelia Karatas. *Karatas,* or *upright-leaved wild Ananas.*
*Lin. ſpec.* 408. *ſyſt.* 313. *Reich.* 2. 7. *mant.* 362. *Jacqu. amer.* 90. *hort.* 31, 32. *amer. pict.* 47. *t.* 260. *f.* 24.
K. fol. altiſſimis anguſtiſſimis & aculeatis. *Plum. gen.* 10?
*Leaves erect; flowers ſtemleſs ſeſſile aggregate.*]

4. Bromelia lingulata. *Tongue-leaved Bromelia.*
*Lin. ſpec.* 409. *Reich.* 2. 7. *Mill. dict. n.* 2. *Plum. gen.* 26. *ic.* 64. *f.* 1.
*Leaves ſerrate-ſpiny obtuſe, ſpikes alternate.*

5. Bromelia nudicaulis. *Naked-ſtalked Bromelia.*
*Lin. ſpec.* 409. *Reich.* 2. 7. *Mill. dict. n.* 1. *Plum. gen.* 46. *ic.* 62.
*Radical leaves tooth-ſpiny; ſtem-leaves quite entire.*

[6. Bromelia humilis. *Dwarf Bromelia.*
*Lin. ſyſt.* 313. *Reich.* 2. 7. *Jacqu. vind.* 306.
*Almoſt ſtemleſs; flowers aggregate, ſeſſile; axillas ſtoloniferous.*

7. Bromelia Acanga.
*Lin. ſpec. edit.* 1. 285. *ſyſt.* 313. *Reich.* 2. 7. *hort. upſ.* 73.
Caraguata. *Piſ. braſ.* 90. *t.* 91.
Mexocotl. ſ. Manguei. *Hern. mex.* 272. *Mor. hiſt.* 2. *ſ.* 4. *t.* 22. *f.* 7. *Raii hiſt.* 1200. *n.* 3.
*Panicle diffuſed; leaves ciliate-ſpiny mucronate recurved.*

8. Bromelia bracteata.
*Swartz prodr.* 56.
*Leaves ſerrate-ſpiny, bractes ovate-lanceolate, ſcape elongated, raceme compound, racemules ſubdivided, flowers ſeſſile.*

9. Bromelia paniculigera.
*Swartz prodr.* 56.
*Leaves ſerrate-ſpiny, bractes lanceolate, raceme compound, racemules ſubdivided, flowers pedunculed.*

DESCRIPTIONS, &c.

Theſe are herbaceous plants, and ſome of them paraſitical; the root-leaves are channelled, and moſtly toothed and ſpiny about the edge. Plumier and others have ſeparated this genus into three, and in that have been followed by Mr. Miller, who treats of it under three ſeparate articles, *Ananas, Bromelia,* and *Karatas.* The original Bromelias of Plumier have the flowers on a looſe ſpike or panicle, on a ſcape or ſtalk, and the fruits can hardly be called berries. In the Karatas, the flowers are in a cloſe radical corymb, and the fruits are ovate berries. The flowers of the Ananas are in a cloſe ſpike on a ſcape which is leafy at top; as the ſpike ripens, it takes the form of a fleſhy ſcaly ſtrobile, vulgarly called the fruit, and compoſed of many coadunate berries, which have ſcarcely any cells, or ſeeds [a].

1. The fruit now ſo well known in Europe, by the name of Ananas or Pine-Apple, and ſo much eſteemed for the richneſs of its flavour, is produced from an herbaceous plant, which has leaves ſomewhat reſembling thoſe of Aloe, and for the moſt part ſerrate on their edges; but much thinner, and not ſo ſucculent as thoſe of the Aloe. The fruit reſembling in ſhape the cone of ſome ſpecies of the Pine-tree, has its vulgar name of Pine-Apple from that circumſtance.

As ſome of the fruits produce ſeeds in England, when the greater number have no appearance of any, I doubt whether there may not be ſome with male, and others with hermaphrodite flowers; becauſe thoſe fruits which have ſeeds are remarkably different from the others, when cut through the cells in which the ſeeds are lodged; for in theſe they lie near to the centre of the fruit, whereas in thoſe which have abortive cells they are chiefly cloſe to the rind.

Where this plant is a native is hard to determine, but it is probably an indigenous plant of Africa, where it grows in uncultivated places in great plenty. [Linneus aſcribes it to New Spain and Surinam: and Acoſta ſays, that it was firſt ſent from the province of Santa Croce in Braſil into the Weſt, and afterwards into the Eaſt Indies. Probably it is common to the tropical parts of the three continents, of Aſia, Africa, and America.

It is commonly ſaid, that Sir Matthew Decker of Richmond was the firſt who raiſed the Ananas here; but it was introduced into England, ſo far back as the year 1690, by Mr. Bentick [b].

A picture is reported to be extant of King Charles (I ſuppoſe the ſecond) with his gardener preſenting him a Pine-apple; but the fruit might come from Holland, or the picture might be painted abroad.]

There are many varieties of this fruit, and I doubt not but if the ſeeds were ſown frequently in their native country, the varieties might be as numerous as thoſe of Apples or Pears in Europe. This is rendered probable by ſome trials which I have made in ſowing the ſeeds, which have always produced a variety of ſorts from the ſame fruit.

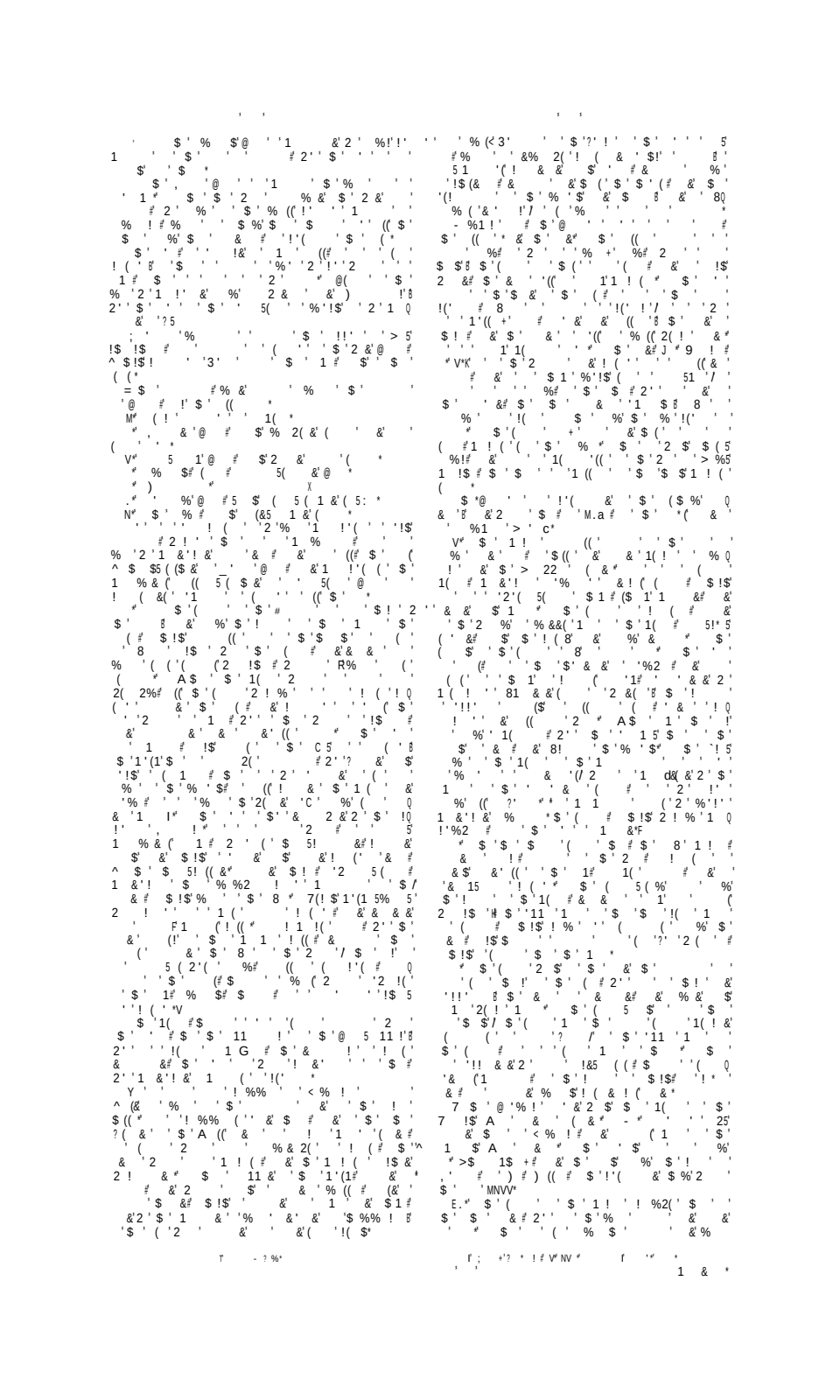
α. The Queen Pine is the moſt common in Europe, but the Sugar-loaf is much preferable to it, the fruit being larger and much better flavoured; the juice alſo is not ſo aſtringent as that of the firſt, ſo that this fruit may be eaten in greater quantity with leſs danger.

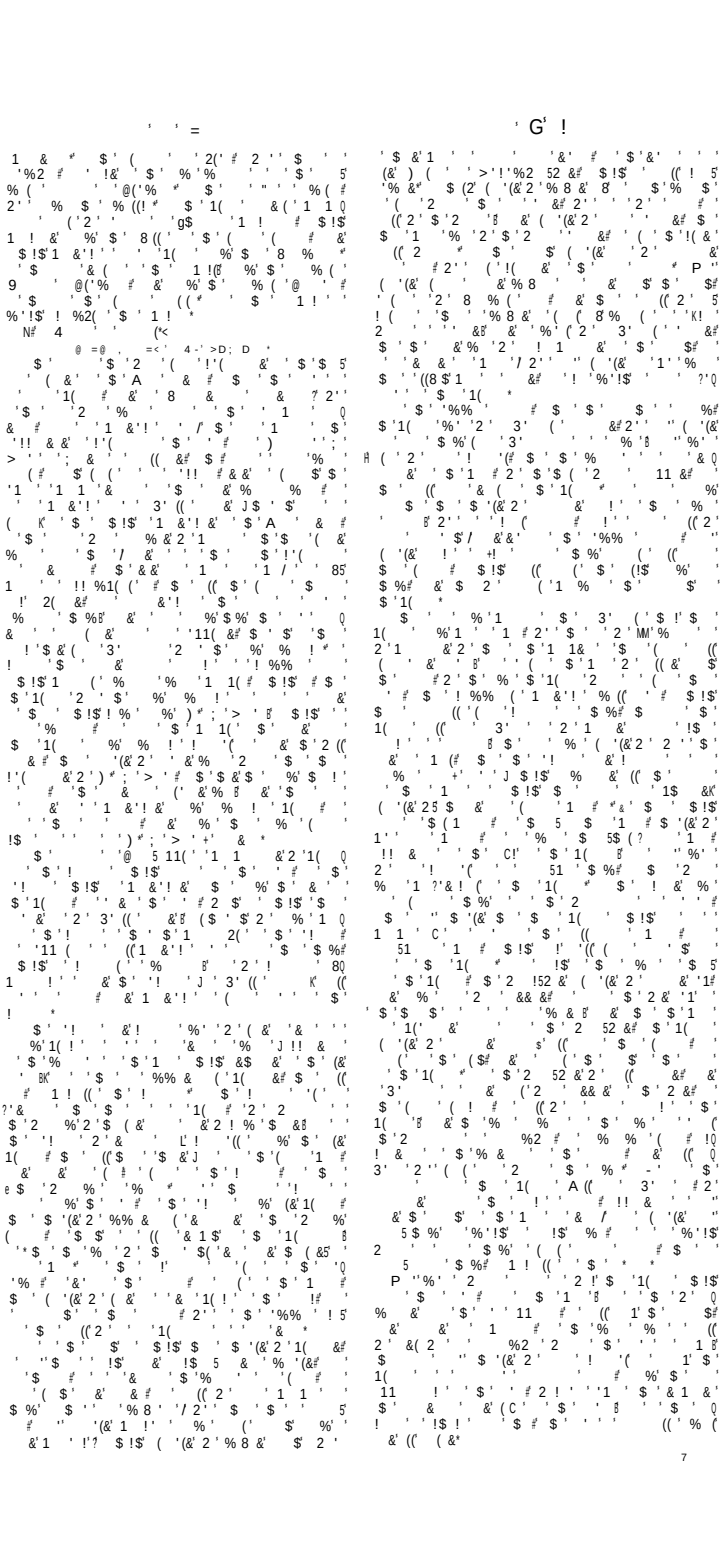
β. The Sugar-loaf Pine is eaſily diſtinguiſhed from all the others, by its leaves having purple ſtripes on their inſide the whole length. The fruit is of a paler colour when ripe, inclining to a ſtraw-colour. This was brought from Braſil to Jamaica, where it is eſteemed far beyond the others.

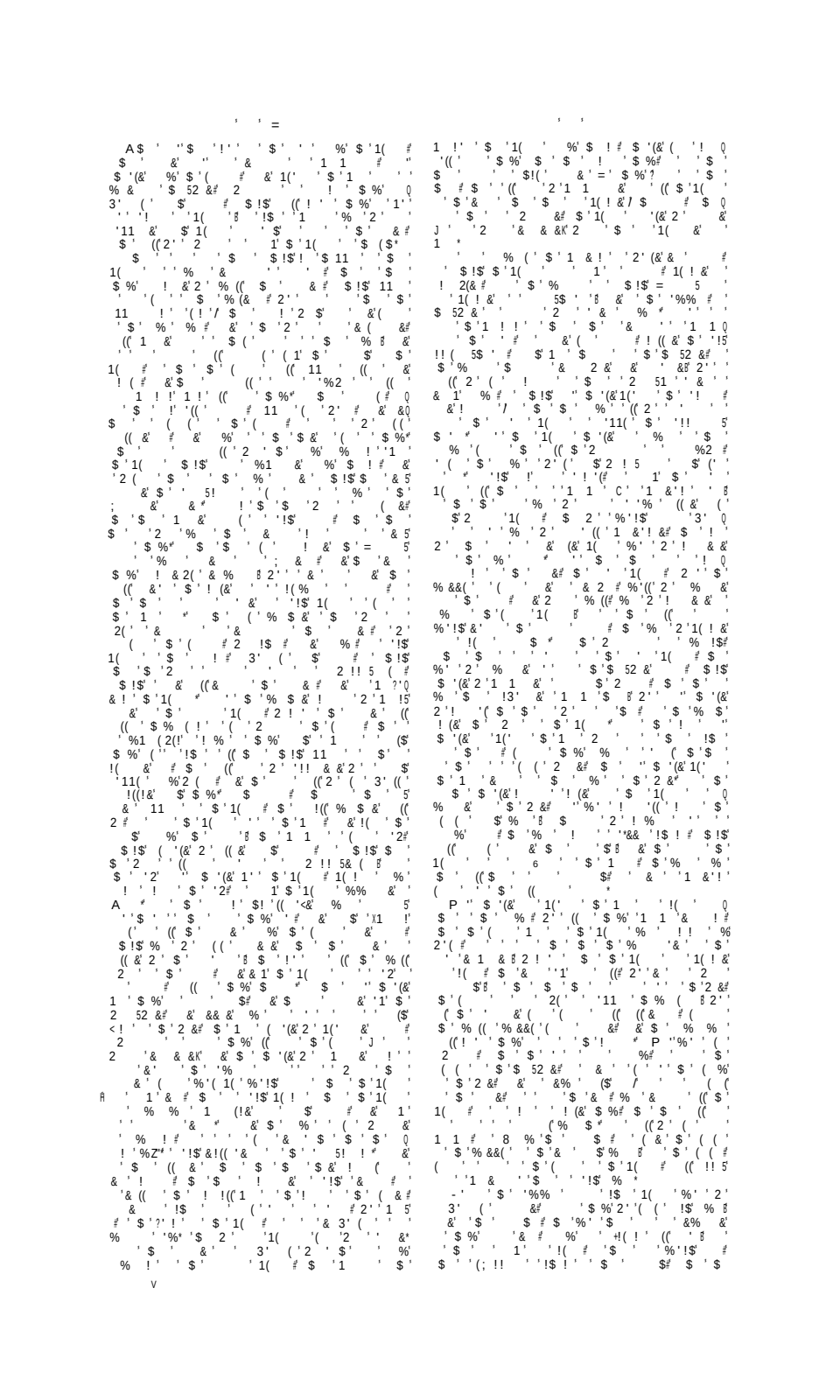
The next in goodneſs to this is what the inhabitants of the iſlands in America call the Montſerrat Pine. The leaves are of a dark brown, inclining to purple on their inſide. The protuberances of the fruit are longer and flatter than thoſe of the common ſort. I raiſed ſeveral plants of this from ſeeds which I received from the iſland of St. Thomas, where this fruit is in greater perfection than in any of the Britiſh iſlands.

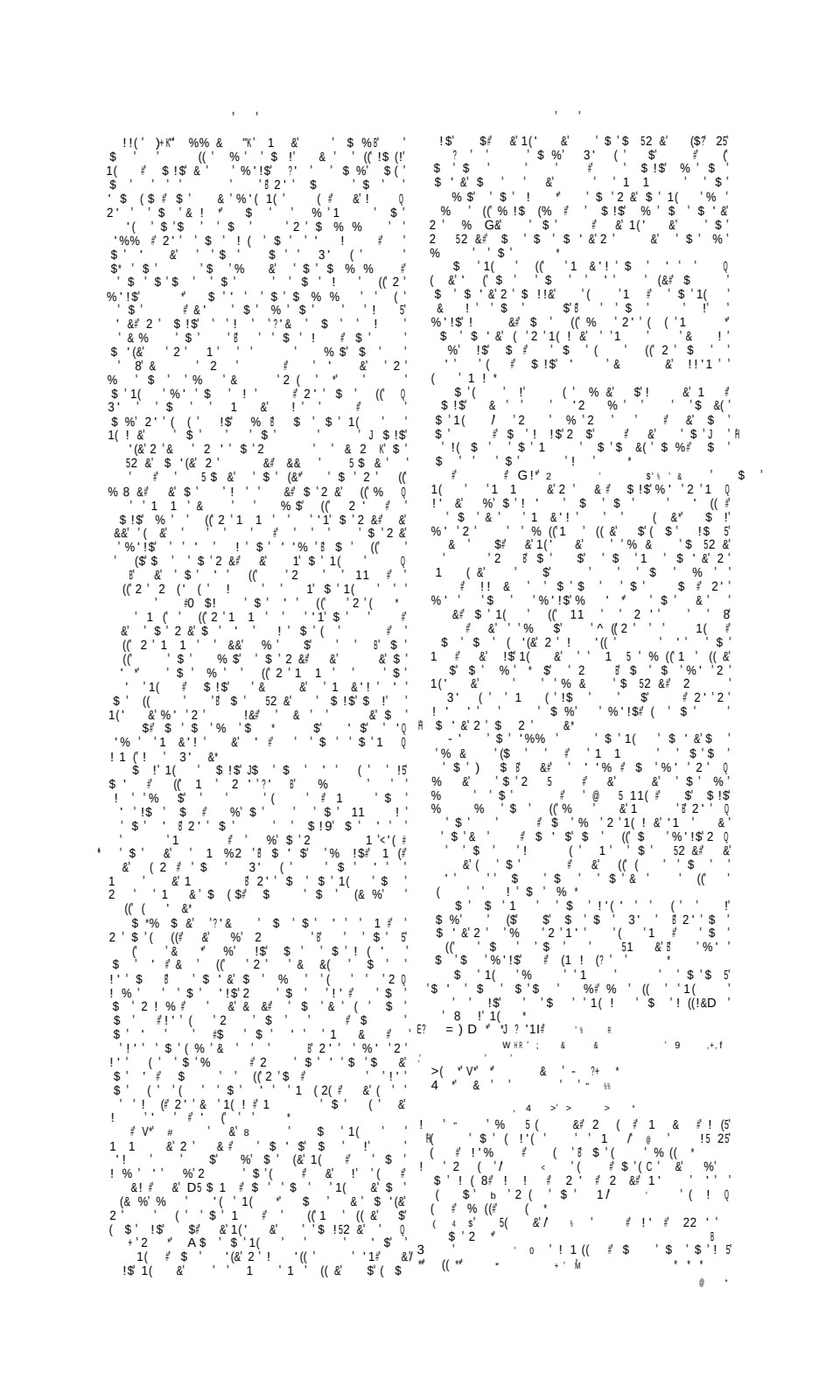
γ. The King Pine was raiſed from ſeeds taken out of a rotten fruit, which came from the Weſt Indies to Henry Heathcote, Eſq. from whom I received one plant, which has produced large fruit. I have ſince raiſed ſome plants of this ſort from ſeeds, which were brought me from Jamaica.

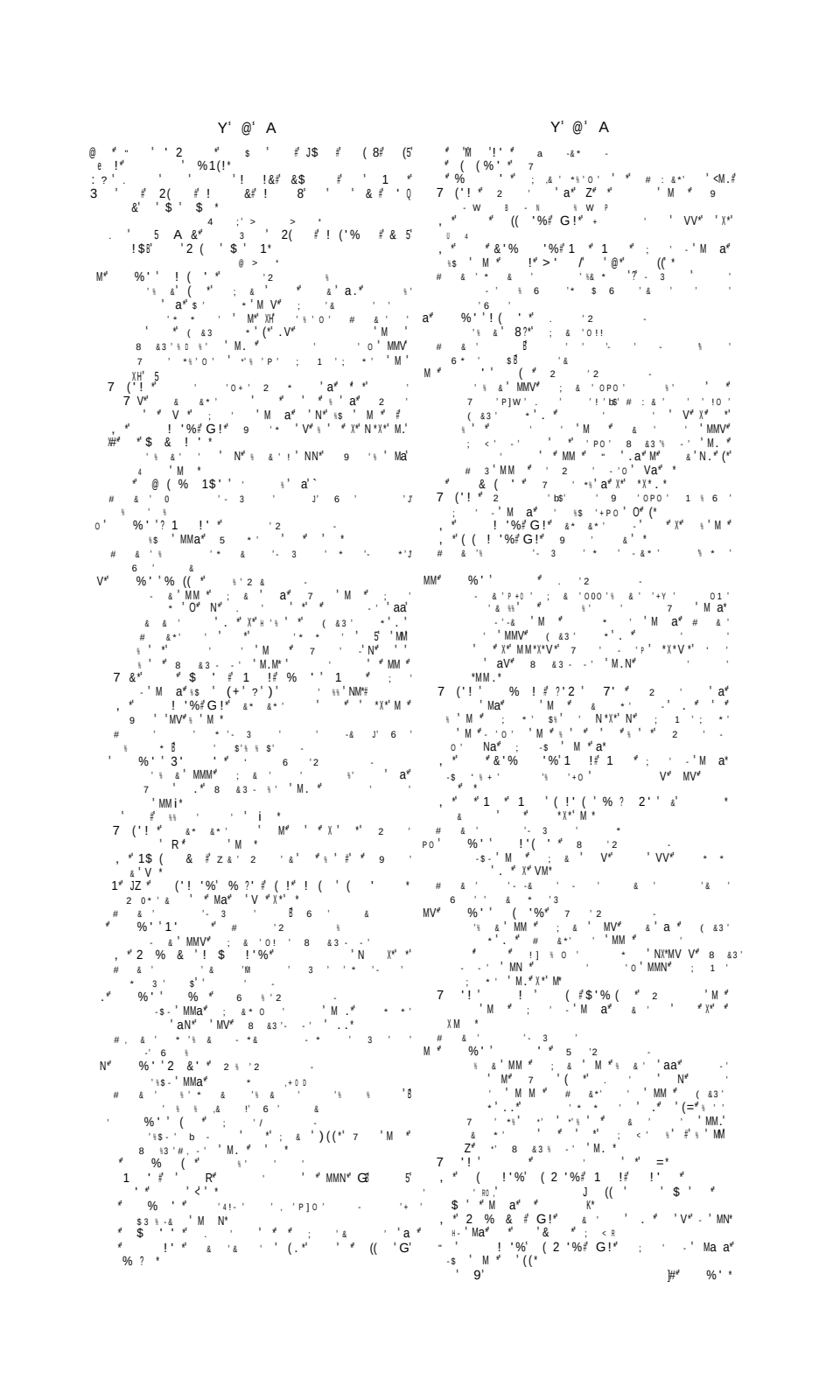
[a] Juſſieu gen.
[b] Hort. kew.











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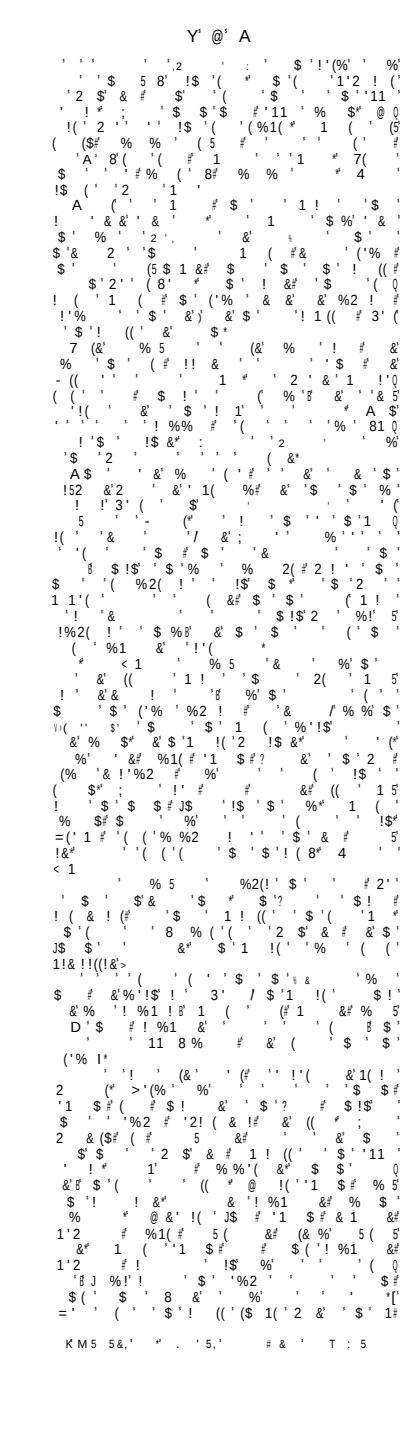





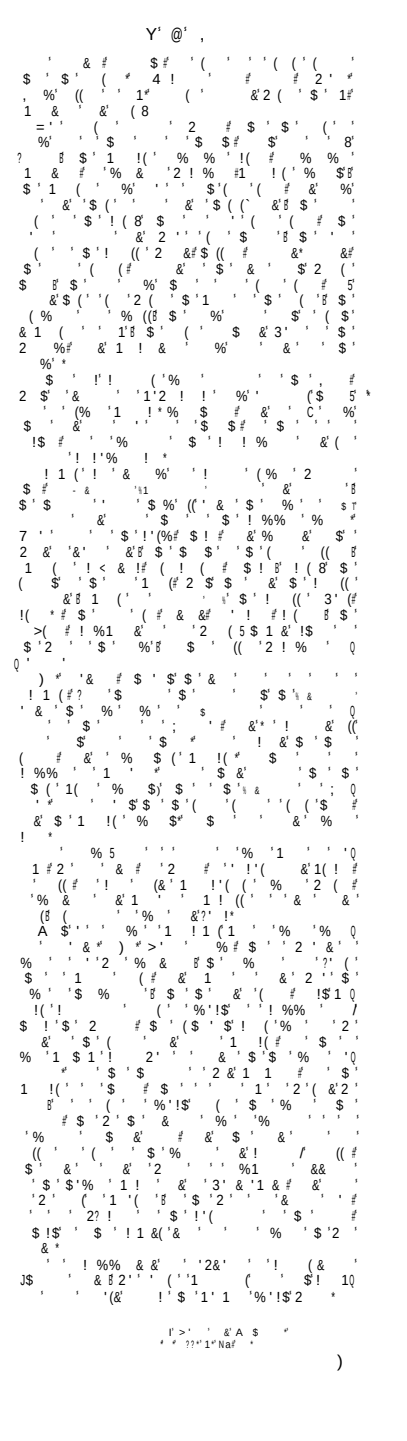

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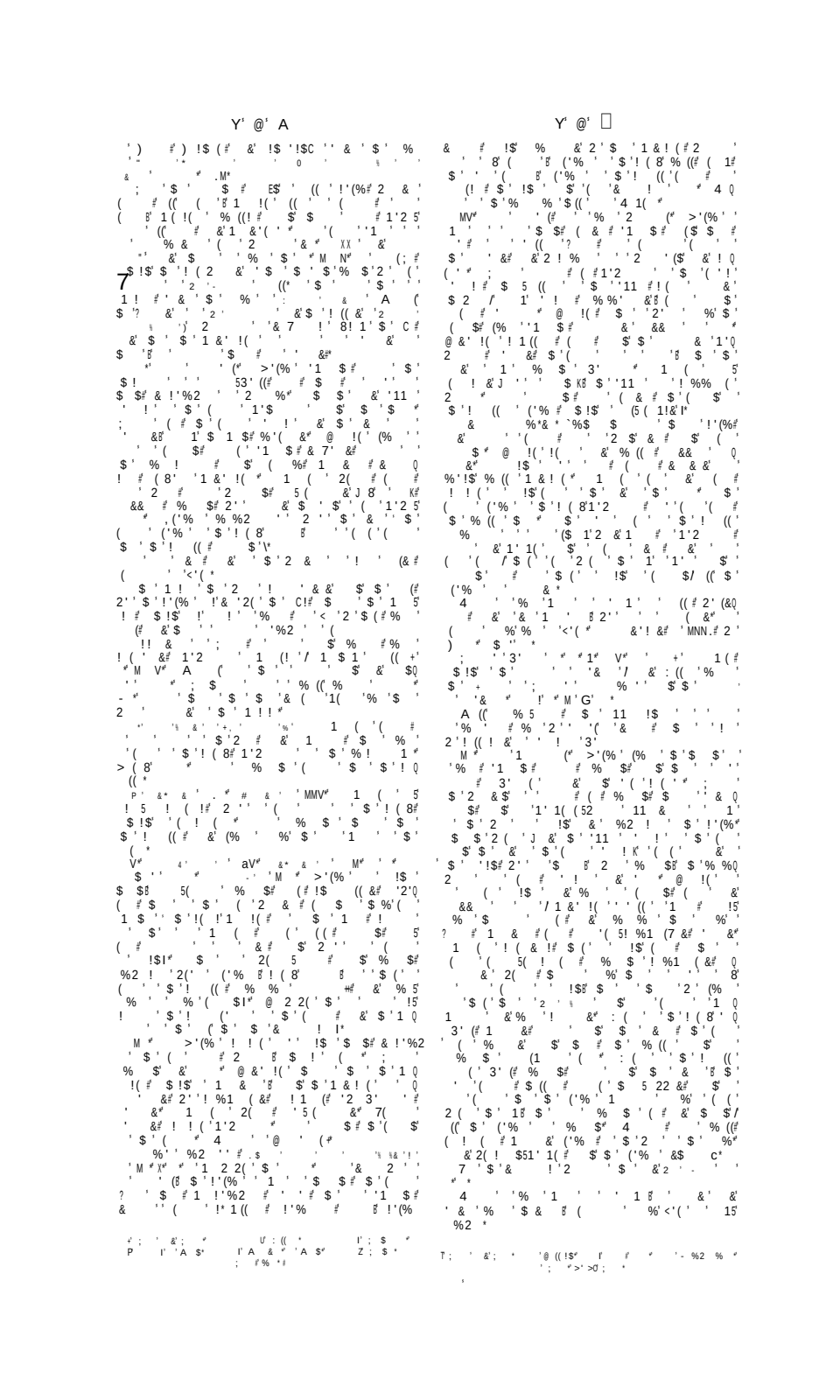

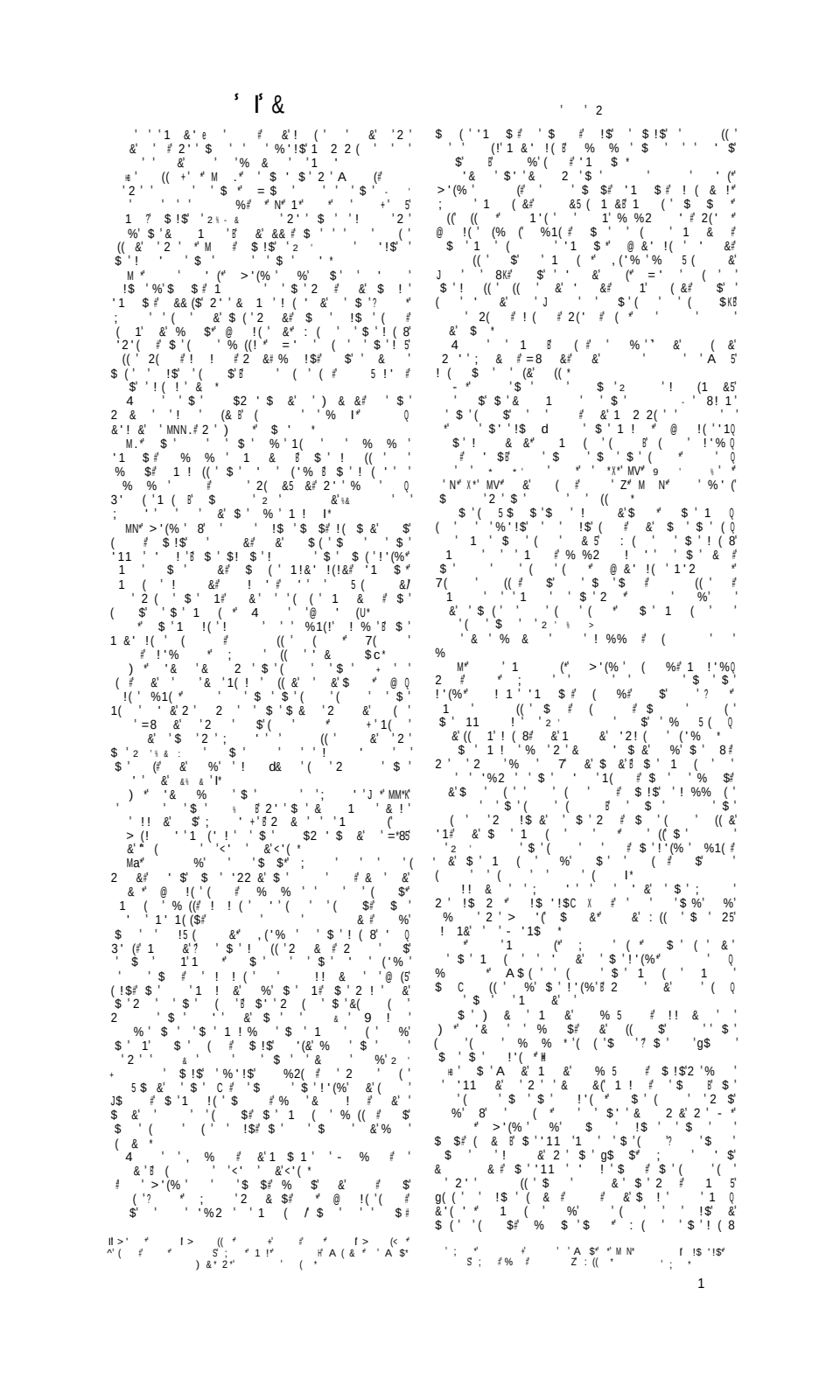

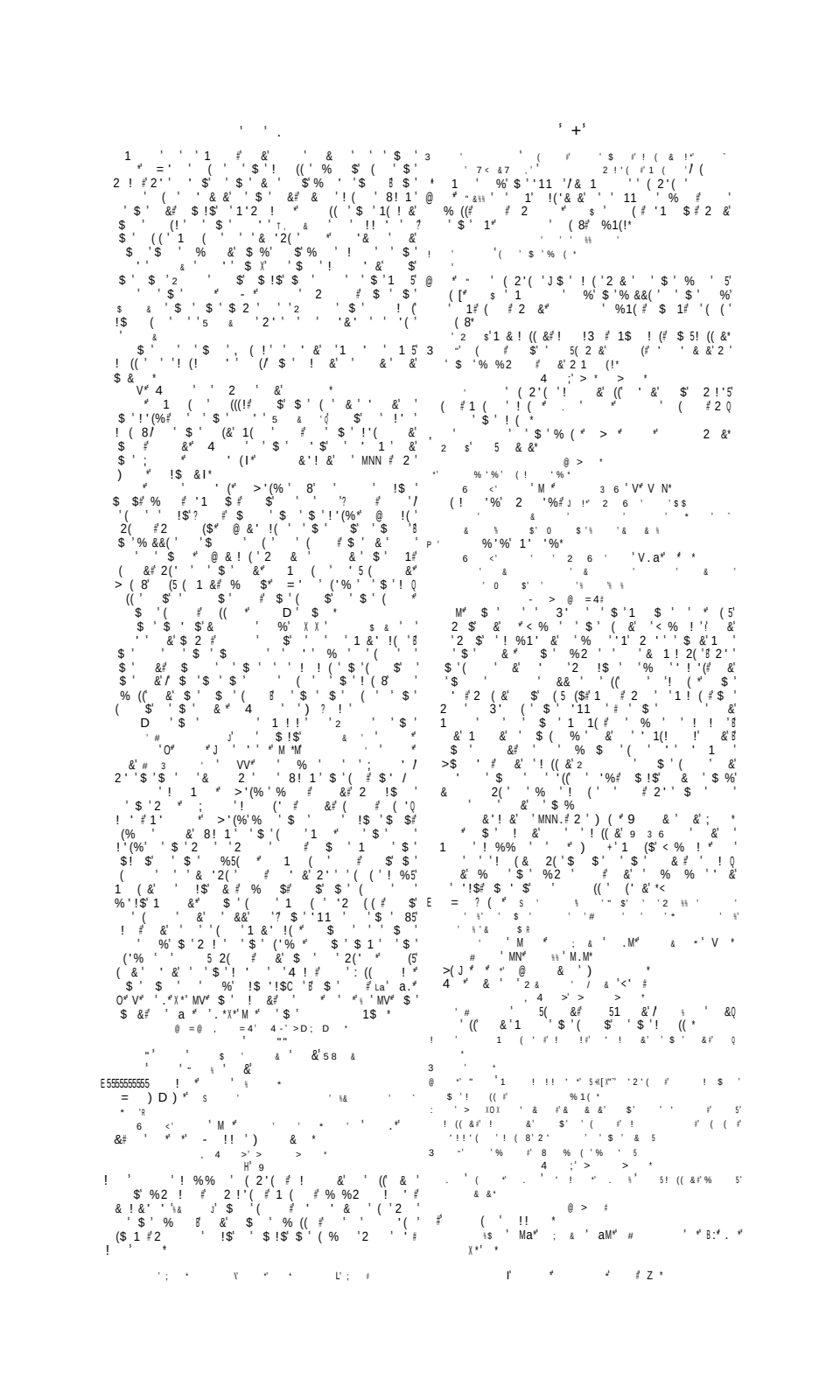

Y' @' A

form heads or bunches of the size of one's fist. They are red and make a very beautiful appearance. The stamens are extremely long. It grows principally in hilly situations.

[BRUCEA. (*So named by Sir Joseph Banks, in honour of James Bruce, Esq. the traveller into Abyssinia, who first brought the seeds thence into England.*)
*Lin. gen. Schreb. n.* 1508. *L'Herit. sirp.* 19. *t.* 10. *Juss.* 373.
Class. 22. 4. Dioecia Tetrandria.

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* four-parted, flat, villose: *parts* lanceolate, acute, spreading.
COR. *Petals* four, lanceolate, acute, ciliate, spreading, scarcely larger than the calyx.
*Nectary*, a body placed on the receptacle, flat, four-lobed; lobes obscurely emarginate, opposite to the petals.
STAM. *Filaments* four, upright, short, opposite to the calyx, inserted into the receptacle between the lobes of the nectary. *Anthers* roundish.

* *Female.*

CAL. and COR. as in the male.
*Nectary*, the inner margin of the receptacle thickened, four-lobed; lobes emarginate.
STAM. *Filaments* four, inserted into the receptacle on the outside of the divisions of the nectary, filiform but thicker towards the tip, sharpish, a little shorter than the petals; without any *anthers*.
PIST. *Germs* four, superior, ovate, compressed on the inner side. *Styles* subulate, reflex, lying on the germs. *Stigmas* acute.
PER. four, one-seeded.
SEEDS solitary.

ESSENTIAL CHARACTER.

*Cal.* four-leaved. *Cor.* four-petalled.
FEM. *Peric.* four, one-seeded.

SPECIES.

1. Brucea ferruginea.
*L'Herit. sirp. nov. p.* 19. *t.* 10. *Hort. kew.* 3. 397.
Brucea antidysenterica. *Bruc. abyss.* 5. 69. *J. F. Miller ic. t.* 25.

DESCRIPTION, *&c.*

Mr. Bruce thus imperfectly describes it. Leaf pinnate: leaflets oblong, pointed, smooth, and without collateral ribs that are visible; the upper side of a deep green, the reverse very little lighter, opposite with a single one at the end. The flowers come chiefly from the point of the stalk, on each side of a long branch.

Mons. L'Heritier has described it more completely. It is a shrub of the middling size. Stem upright; the bark ash-coloured, becoming yellowish: branches few, alternate, patulous, round, thick, with broad scars from the fallen leaves continuing long on them: shoots angular with the petioles, tomentose, rufous. Leaves alternate, spreading, unequally pinnate, consisting of six pairs of opposite lobes, one foot in length: petiole round, thickened at the base, tomentose, rufous. Leaflets on short petiolules, oblong-ovate, entire, acuminate, veined, villose, somewhat fetid when rubbed; the two lower ones smaller, the upper one on a longer petiolule, three inches long, and one inch broad; the midrib raised on both sides, especially beneath; the veins concentrically retuse towards the edges. Spikes of male flowers solitary, axillary, upright at first, then spreading, finally nodding, peduncled, almost simple, or scarcely compounded of many-flowered, very short spikelets, remote at bottom, but gradually approximating towards the top, tomentose, rufous, from six to eight inches in length: the flowers are crowded together, either sessile or on very short pedicels, of an herbaceous colour tinged with red or russet.

The male plant began to flower in the stove of the Paris botanic garden, when it was between two and three feet in height in may and june 1780 or 1781. The female plant has flowered in the royal garden at Kew, in april and may; and was introduced there in 1775[a].

It is a native of Abyssinia, where it is known by the name of *Wooginoos*. The root is a specific in the dysentery. It is a plain simple bitter, without any aromatic or resinous taste; leaving in the throat and palate something of roughness, resembling Ipecacuanha[b].]

BRUNELLA. See *Prunella*.

BRUNFELSIA. (*So named by Plumier, from Otho or Otto Brunfelsius, of Mentz, first a Carthusian monk, and afterwards a physician. He published the first good figures of plants in* 1530, *and died in* 1534.)
*Lin. gen. n.* 260. *Reich.* 281. *Schreb.* 1013. *Plum.* 22. *Juss.* 127.
Class. 14. 2. Didynamia Angiospermia.
Nat. order of *Personatae*. *Solaneae* Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-shaped, five-toothed, obtuse, very small, permanent.
COR. one-petalled, funnel-form: *tube* very long, slightly curved inwards: *border* flat, five-cleft, blunt.
STAM. *Filaments* four very short. *Anthers* oblong, upright: two a little higher than the others, prominent from the mouth of the tube.
PIST. *Germ* roundish, small. *Style* filiform, the length of the tube. *Stigma* thickish.
PER. *Capsule* berried on the outside, globular, one-celled, two-valved.
SEEDS very many, compressed, convex on one side, angular on the other, rugged with dots. *Receptacle* fastened to the bottom of the capsule, chaffy: *chaffs* coadunate, subulate at the tip, separating the seeds.
OBS. *The pericarp is called a berry by Linnæus and others; but since it opens determinately by a distinct future from the top to the base, it is rather a capsule.*

ESSENTIAL CHARACTER.

*Cal.* five-toothed, narrow. *Cor.* with a very long tube. *Caps.* one-celled, many-seeded, with a very large fleshy conceptacle.

SPECIES.

1. Brunfelsia americana.
*Lin. spec.* 276. *Syst.* 231. *Reich.* 1. 535. *Hort. kew.* 2. 340. *Swartz prodr.* 90. *obs.* 91. *Plum. gen.* 12. *ic.* 65. *Brown. jam.* 141. Catesbæa.
*Leaves elliptic acuminate, on longer petioles; tube of the corolla erect, border entire.*
[2. Brunfelsia undulata.
*Swartz prodr.* 90.
*Leaves lanceolate-ovate, drawn to a point at both ends, petioles very short; tube of the corolla curved, border waved.*

DESCRIPTIONS, *&c.*

1. This is a tree growing from ten to fifteen feet in height. Mr. Miller gives eight or ten feet, and Browne only five or six for the height. The trunk is smooth and even, and the branches loose. Leaves alternate, entire, smooth, somewhat shining; on cylindric, short petioles, somewhat reflex. Flowers axillary and terminating, peduncled. Corolla yellow, turning white, very sweet-scented, having a tube four or five inches in length. Anthers globular, bifid; those of the upper filaments, together with the stigma close up the aperture of the tube. The fruit is green, with a red conceptacle[c].]

According to Mr. Miller, the leaves are unequal in size; on the lower part of the branches coming out single, but towards the extremity placed on every side. The flowers are produced generally three or four together: the tube is very long, narrow, and hairy; the brim is expanded in form of the great Bindweed (Convolvulus sepium), and is almost as large.

It grows naturally in Jamaica and most of the sugar islands in the West Indies; where they call it Trumpet Flower.

[a] Hort. kew. [b] Bruce. [c] Swartz obs.

[It was cultivated in 1739, by Mr. Miller, and flowers with us in june and july [d]. In Jamaica it flowers in the ſpring [e].

2. This alſo is a native of Jamaica [f].]

PROPAGATION AND CULTURE.

Theſe plants may be propagated from ſeeds, which ſhould be ſown early in the ſpring in pots filled with light earth, and plunged into a hot-bed of tanners bark, obſerving to water the earth as often as you find it neceſſary. When the plants are come up, they ſhould be tranſplanted each into a ſeparate ſmall pot filled with freſh light earth, and plunged into the hot-bed again, obſerving to water and ſhade the plants until they have taken root; after which they muſt have air admitted to them every day, in proportion to the warmth of the ſeaſon. When the plants have advanced ſo high as not to be contained in the frames they ſhould be removed into the bark-ſtove, where, during the ſummer months, they ſhould have a large ſhare of free air, but in winter they muſt be kept very cloſe. With this management the plants will be very ſtrong, and produce their flowers every ſeaſon. Theſe plants may alſo be increaſed by planting cuttings in the ſpring, before they begin to make new ſhoots, in pots filled with freſh light earth, and plunged into a hot-bed of tanners bark, obſerving to water and ſhade them until they have taken root; after which, they muſt be managed as has been directed for other tender exotic plants from the ſame countries.

[BRUNIA. *(Said to be ſo named from Cornelius Brun, a traveller into the Levant and Ruſſia, at the end of the laſt and the beginning of the preſent century.)*

*Lin. gen. n.* 274. *Reich.* 293. *Schreb.* 376. *Juſſ.* 381, 452.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Aggregatæ*. *Rhamni* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth common* roundiſh, imbricate, many-flowered: *leaflets* ovate-oblong.—*Proper* five-leaved, inferior: *leaflets* oblong, villoſe.

COR. *Petals* five: claws ſlender; borders roundiſh, ſpreading.

STAM. *Filaments* five, capillary, inſerted into the claws of the petals. *Anthers* ovate-oblong.

PIST. *Germ* very ſmall, ſuperior. *Style* ſimple, cylindric. *Stigma* obtuſe.

PER.

SEED.

RECEPT. common hairy.

ESSENTIAL CHARACTER.

*Flowers* aggregate. *Filam.* inſerted into the claws of the petals. *Stigma* bifid. *Seeds* ſolitary, two-celled.

SPECIES.

1. Brunia lanuginoſa. *Heath-leaved Brunia.*
*Lin. ſpec.* 288. *ſyſt.* 240. *Reich.* 1. 560. *hort. cliff.* 71. *Berg. cap.* 60. *Pluk. phyt. t.* 318. *f.* 4. (Tamariſcus.)
*Leaves linear, ſpreading, callous at the end.*

2. Brunia ciliata. *Ciliate-leaved Brunia.*
*Lin. ſpec.* 288. *ſyſt.* 240. *Reich.* 1. 561.
*Leaves ovate acuminate ciliate.*

3. Brunia verticillata. *Whorled Brunia.*
*Lin. ſyſt.* 241. *ſuppl.* 156.
*Leaves three-cornered, branchlets in whorls faſtigiate, heads terminating ſmooth.*

DESCRIPTIONS, &c.

1. This reſembles *Leviſanus abrotanoides*, and has the nectareous chink as in that [g]. The ſtem is about a foot high, and ſhrubby. The leaves linear-filiform, ſmooth, ſhort, with black tips. The flowers, which are white, are borne in heads.

It was introduced in 1774, by Mr. Francis Maſſon [h].

2. The germ ſuperior, and the ſtyle bifid [i].

3. Heads ſmall, not globular. They are all ſhrubs, and inhabitants of the Cape. This was found there by Thunberg.

BRUNIA. For the other ſpecies, ſee *Leviſanus*.

[d] Hort. kew. [e] Swartz obſ. [f] Swartz prodr. [g] Linn. [h] Hort. kew.

BRUNSFELSIA. See *Brunfelſia*.

BRUNSVIGIA. See *Amaryllis*.]

BRUSCUS. See *Ruſcus*.

[BRYA. See *Amerimnum*.

BRYANTHA and BRYANTHUS. See *Andromeda*.]

BRYONIA. (Bryonia *Plin.* Βρυωνια *Dioſcor.* *From* Βρυω, *germino, pullulo. Others derive it from* Βρυαω, *exſtollo, becauſe it raiſes itſelf by laying hold on ſhrubs, &c. with its tendrils: but the firſt derivation is the true one.*)

*Lin. gen. n.* 1093. *Reich.* 1194. *Schreb.* 1480. *Gærtn. t.* 88. *Juſſ.* 394. *Tournef.* 28. *Ray* 72. *n.* 3.

Claſſ. 21. 10. Monoecia Syngeneſia.

Nat. order of *Cucurbitaceæ*.

GENERIC CHARACTER.

* *Male flowers.*

CAL. *Perianth* one-leafed, bell-ſhaped, five-toothed: *toothlets* ſubulate.

COR. five-parted, bell-ſhaped, faſtened to the calyx: *diviſions* ovate.

STAM. *Filaments* three, very ſhort. *Anthers* five, two connate on each of two filaments, and a ſingle one on the third.

* *Female flowers.*

CAL. *Perianth* as in the males, ſuperior, deciduous.

COR. as in the males.

PIST. *Germ* inferior. *Style* trifid, the length of the corolla expanded. *Stigmas* emarginate, patulous.

PER. *Berry* ſubglobular, ſmooth and even.

SEEDS a few, faſtened to the coat, ſubovate.

OBS. *Our common Engliſh ſpecies is dioecous.*

ESSENTIAL CHARACTER.

*Cal.* five-toothed. *Cor.* five-parted.

MALE. *Filaments* three. FEM. *Style* quadrifid. *Berry* ſubglobular, many-ſeeded.

SPECIES.

1. Bryonia alba. *Black-berried white Bryony.*
*Lin. ſpec.* 1438. *ſyſt.* 869. *Reich.* 4. 207. *hort. cliff.* 453. *ſuec. n.* 876. *mat. med.* 210. *Neck. gallob.* 392. *Scop. carn. n.* 1200. *Blackw. t.* 533. a. b. *Fl. dan. t.* 813.
B. alba baccis nigris. *Baub. pin.* 297. *Raii hiſt.* 659. *ſyn.* 261. *Park.* 178. *n.* 2.
*Leaves palmate, callous-ſcabrous on both ſides: flowers monoecous: berries black.*]

2. Bryonia dioica. *Red-berried white Bryony.*
*Lin. ſyſt.* 870. *Jacqu. auſtr. t.* 199 *With.* 1133.
B. alba. *Huds. angl.* 437. *Lightf. ſcot.* 590. *Hall. helv. n.* 574. *Allion. pedem. n.* 455. *Leers herborn. n.* 744. *Pollich pal. n.* 915. *Mill. fig. t.* 71. *Blackw. t.* 37. *Sabb. hort. t. t.* 58. *Ger.* 720. *emac.* 869. *Park.* 178. *f.* 1. *Raii hiſt.* 659. *Woodv. med. bot.* 517. *t.* 189.
B. alba β. *Reich.* 4. 208.
B. aſpera ſ. alba baccis rubris. *Baub. pin.* 297.
B. ſ. Vitis alba. *Matth.* 791. *Cam. epit.* 987. *Fuchſ.* 95.
*Leaves palmate, callous-ſcabrous on both ſides; flowers dioecous; berries red.*

[3. Bryonia palmata. *Palmated Bryony.*
*Lin. ſpec.* 1438. *Reich.* 4. 208. *Fl. zeyl. n.* 353. *Burm. zeyl.* 49.—fol. quinquepartito.
*Leaves palmate, ſmooth and even, five-parted; diviſions lanceolate repand-ferrate.*

4. Bryonia grandis. *Great-flowered Bryony.*
*Lin. ſyſt.* 870. *Reich.* 4, 208. *mant.* 126. *Burm. zeyl.* 49. *t.* 19. *f.* 2. *Rumph. amb.* 5. 448. *t.* 166. *f.* 1. *Lour. cochinch.* 595.
*Leaves cordate angular ſmoothiſh glandular at the baſe underneath; tendrils ſimple.*

5. Bryonia cordifolia. *Heart-leaved Bryony.*
*Lin. ſpec.* 1438. *ſyſt.* 870. *Reich.* 4. 208. *Fl. zeyl. n.* 354.
*Leaves cordate oblong five-lobed toothed ſcabrous, petioles two-toothed.*

6. Bryonia laciniosa. *Laciniated Bryony.*
*Lin. ſpec.* 1438. *ſyſt.* 870. *Reich.* 4. 208. *hort. cliff.* 452. *fl. zeyl. n.* 355. *Herm. lugdb.* 95. *t.* 97. *parad. t.* 107. *Gærtn. fruct.* 2. 46.
*Leaves palmate; diviſions lanceolate ſerrate; petioles muricate.*]

7. Bryonia africana. *African Bryony.*
*Lin. ſpec.* 1438. *Reich.* 4. 209. *hort. cliff.* 453. *Herm. par.* 107. *t.* 108. *Gærtn. fruct.* 2. 47.
*Leaves palmate five-parted ſmooth and even on both ſides; diviſions pinnatifid.*

8. Bryonia cretica. *Cretan Bryony.*
*Lin. ſpec.* 1439. *Reich.* 4. 209. *hort. cliff.* 453.
B. alba maculata. *Bauh. piſt.* 2. 146. *Raii hiſt.* 660.
B. cretica mac. *Bauh. pin.* 297. *prodr.* 135. *Park. theat.* 178. *n.* 3.
*Leaves palmate, callous-dotted on the upper ſurface.*

[9. Bryonia ſcabra. *Rough* or *globe-fruited Bryony.*
*Lin. ſyſt.* 870. *ſuppl.* 423.
*Leaves cordate angled villoſe underneath, callous-ſcabrous on the upper ſurface; tendrils ſimple; berries globular; ſeeds ſmooth.*

10. Bryonia ſcabrella. *Roughiſh* or *briſtly Bryony.*
*Lin. ſyſt.* 870. *ſuppl.* 424.
*Leaves cordate angular and lobed callous-biſpid; tendrils ſimple; berries globular; ſeeds muricate.*

11. Bryonia japonica. *Japan Bryony.*
*Lin. ſyſt.* 870. *Thunb. jap.* 325.
*Leaves cordate, undivided and angular, toothed, unarmed-biſpid.*

12. Bryonia latebroſa. *Hairy Bryony.*
*Ait. hort. kew.* 3. 384.
*Leaves ſubtrilobate hairy drawn to a point at the baſe.*

12. Bryonia verrucoſa. *Warted Bryony.*
*Ait. hort. kew.* 3. 385.
*Leaves cordate awled, the upper ſurface and the veins underneath, callous-ſcabrous, the calloſities remote; tendrils ſimple; berries globular.*]

14. Bryonia racemoſa.
*Mill. dict. n.* 4. *Swartz prodr.* 116. *Plum. fil.* 83. *t.* 97.
*Leaves cordate three-lobed, the upper ones ovate and ſomewhat rugged, flowers in racemes, berries nodding oval.*

15. Bryonia variegata.
*Mill. dict. n.* 5.
*Leaves palmate with lanceolate ſegments, ſpotted on the upper but ſmooth on the under ſide; fruit ovate ſcattered.*

16. Bryonia bonarienſis.
*Mill. dict. n.* 6. *Dill. eltb.* 58. *t.* 50. *f.* 58.
*Leaves palmate five-parted hairy, with obtuſe ſegments.*

[17. Bryonia haſtata.
*Lour. cochinch.* 594.
*Leaves haſtate, toothletted, ſmooth: peduncles many-flowered.*

18. Bryonia triloba.
*Lour. cochinch.* 595.
*Leaves three-lobed five-nerved, ſtipules roundiſh concave, peduncles one-flowered.*

19. Bryonia cochinchinenſis.
*Lour. cochinch.* 595.
*Leaves five-cornered, rough; berries three-celled, ten-cornered.*

DESCRIPTIONS, *&c.*

1. Black-berried White Bryony ſeems to differ from the red in little elſe beſides the colour of the berries. There is a very particular deſcription of it in John Bauhin's hiſtory from Cordus, agreeing with both in all material circumſtances except the above, unleſs we admit the colour of the root, which in this is a pale colour of box within, in that a yelloviſh white[a]. If it be always an androgynous plant, that is a more material diſtinction.

Native of Sweden, Denmark, Carniola, and probably other parts of Europe, in hedges. According to Haller this is more common in Germany than the other. Plukenet ſays it is not unfrequent about Cambridge[b]; but I never heard of any other botaniſt who found it there, or in any other place in England.

2. Red-berried White Bryony is eaſily diſtinguiſhed by its prodigious root, its ſtems climbing by tendrils, leaves reſembling thoſe of the vine in ſhape, not ſmooth however as they are, but harſh and rugged, and of a paler colour, and by its bunches of ſmall berries, which are red when ripe, and produced on a different plant from the male flowers.

The ſtem is thick, grooved, rugged, divided into alternate branches, and climbs to the height of ſix feet and more, by means of ſpiral tendrils which occaſionally turn different ways. Leaves alternate, on round hairy petioles two inches long, divided half way into five lobes, hairy and rugged on both ſides, about four inches in length and three in breadth. They are not properly palmate, even the lower ones being truly lobed. The peduncles come out from the axils of the leaves[c]. In the male plant, the peduncle is longer than the leaf, and has from ten to twenty flowers; the pedicels ſhorter than the peduncle, and ſcattered: the flowers larger and deciduous. The female flowers are on a very ſhort peduncle, only from three to ſix together; pedicels umbellate or ſubcymoſe; at the time of flowering longer than the peduncle: corollas only one-third of the ſize, and paler than the male. Berry globular, red, with five or ſix ſeeds[d].

There are two ſpecies or rather varieties of the Bryony, ſays Mr. Ray, the one *male* or *barren*, in which little racemes of flowers are placed on a common peduncle which is a palm in length, whereas in the female or fertile plant, they are on a very ſhort peduncle ſcarcely an inch long. The flowers alſo (of the male) are double the ſize of the others, and inſtead of a ſtyle a ſhort *umbilicus* occupies the middle, divided into four broad blunt ſegments, ſurrounded with a yellow fringe about the edge. The other variety is *female* or *fertile*. The corolla is monopetalous divided into five ſharp ſegments, of a whitiſh yellow colour with dark veins: it is placed on the top of the berry on a ſhort pedicel iſſuing from the ſummit of the berry itſelf, and falls off entire ſoon after it opens[e]. Here we ſee how accurately our learned countryman deſcribed, and how well he underſtood the doctrine of the ſexes in plants above a century ago[f].

It is common in hedges in moſt countries of Europe: but with us I have not remarked it on very ſtrong land. It flowers in may.

The dioecous plant with red berries ſeems to be more generally ſpread than the other. It is mentioned to grow in all the ſouthern parts of Europe; and Dioſcorides deſcribes his Bryony with red fruit: whereas the monoecous plant with black fruit ſeems to be confined to the northern kingdoms, ſome parts of Germany and Carniola. By keeping them ſeparate, I do not mean poſitively to aſſert that they are diſtinct ſpecies.

Linnæus, as we have already ſeen, ſays that the Bryony in Sweden is androgynous, and has black berries. Scopoli removed a ſingle plant from Gorizia into his garden, and found it to be androgynous: the berries were black. De Necker ſays, that he has ſeen it dioecous, but ſeldom: he does not ſay whether the berries be black or red. Haller affirms, that they have only the red-berried plant in Switzerland, and that it is always dioecous there: but that the other with black berries is more common in Germany. Pollich aſſures us, that it is always dioecous in the Palatinate, and that the berries are red. Villars inſiſts, that the caſe is the ſame in Dauphiné.

Mr. Miller on the contrary[g], has obſerved, that ſeveral plants (with red berries) which he cultivated in different parts of the garden, were of different ſexes while young; but that the plants which produced only male flowers the two firſt years, afterwards had flowers of both ſexes; the number of female flowers the firſt year was ſmall, but as the plants grew older, they became more fruitful. The caſe is the ſame in the Mulberry and other trees which produce flowers of both ſexes.

I have obſerved many hundreds of wild plants

[a] Ray hiſt. [b] Dillenius in Ray ſyn. [c] Pollich. [d] Leers. [e] Hiſt. 659. [f] Before 1686. [g] Figures, p. 48.

during

during a long courſe of years, and could never have the fortune to ſee an androgynous plant of Bryony: nor do I ever remember to have remarked a male and female plant to grow ſo near each other as to give a ſuſpicion that they might ſpring from the ſame root. Male flowers ſeem to be much more abundant than females.

Goats alone are ſaid to eat this plant. Two or three of the berries have been eaten without any obſervable effects [b].

The root of Bryony grows to a vaſt ſize. Our old herbaliſt Gerarde ſays, "the Queene's chiefe Chirurgeon Maſter William Goodorous, ſhewed me a roote hereof, that waied halfe an hundred waighte, and of the bigneſſe of a childe of a yeere olde." To this Linneus aſcribes the quickneſs of its growth, though it ſprings late [i]. With us the young ſhoots begin to appear in march, and the plant flowers in may.]

The roots have been formerly, by impoſtors brought into an human ſhape, carried about the country, and ſhown for Mandrakes to the common people. The method which theſe people practiſed was to open the earth round a young thriving Bryony plant, being careful not to diſturb the lower fibres of the root, to fix a mould ſuch as is uſed by thoſe who make plaſter figures cloſe to the root, faſtening it with wire to keep it in its proper ſituation, and then to fill in the earth about the root, leaving it to grow to the ſhape of the mould, which is effected in one ſummer. [See *Atropa Mandragora*.

This root is a famous hydragogue, is highly purgative and acrid. A dram of it in ſubſtance, or half an ounce infuſed in wine, is a full doſe [k]; others give two drams in dropſical caſes, and have uſed half an ounce of the freſh root, or three drams of it dry in decoction, without purging. Some it purges moderately, others violently, and it frequently becomes diuretic and diaphoretic [l]. A cold infuſion in water is uſed externally in ſciatic pains. A cataplaſm of it is a moſt powerful diſcutient. A decoction made with one pound of the freſh root is the beſt purge for horned cattle. The active virtues of this plant ſeem to give it a claim to more attention than is now beſtowed upon it [m].]

The beſt ſeaſon to take up the roots for uſe is in the autumn, as ſoon as the ſhoots decay; but the leaves and ſhoots are beſt in the ſpring, when they abound with juice.

[It is called in Engliſh Bryony, white Bryony, White wild Vine, wild Hops, wild Nep, and Tetterberry. In German, Zaunrube, Stickwurz. In Dutch, Witte Bryone, wilde Wyngaard. In Swediſh, Hundroſva. In Daniſh, Valtkrove, Galdebær, Hundebær. In French, Bryone, Couleuvrée. In Italian, Brionia, Vite bianca. In Spaniſh, Nueza alba.

3. Leaves heart-ſhaped, the ſide diviſions ſhorteſt; the upper ſurface is marked with dots, very cloſe but ſcarcely viſible: there are callous tubercles on the veins and peduncles. The berries are round and large [n]. Native of the iſland of Ceylon. Introduced in 1778, by Meſſ. Gordon and Græſer [o].

4. Stem ſhrubby, ſmooth, large, branching, climbing with ſimple tendrils. Leaves roundiſh, five-angled, not lobed, ſmooth on both ſides, ſcarcely toothletted, obtuſe, alternate petioled; ſome concave glands are directly under the baſe, and one or two farther off. Flowers large, whitiſh, androgynous, lateral, on one-flowered peduncles. Berry roundiſh, red, ſmooth, five-celled. Seeds few, oblong, obtuſe, compreſſed. Native of India and Cochinchina [p]. Introduced in 1783, by Mr. John Græſer [q].

5. Stem angular, rough. Leaves on long petioles, five-angled, the lower angles ſhorter; the tops of the petioles have two ſide teeth, which at firſt were glands, as in *Cucurbita lagenaria*. There are tendrils from the axils. Native of Ceylon [r].

[b] Withering. [i] Fl. ſuec. p. 344. [k] Withering. [l] Villars. [m] Withering. [n] Linn. [o] Hort. kew. [p] Linn. and Loureiro. [q] Hort. kew. [r] Linn.

6. Leaves rugged on the upper ſurface, more ſo beneath on the rib and nerves. Peduncles more muricated than the ſtem, ſo as to be in a manner prickly. Corolla yellow, rough with hairs or tomentoſe within; on the outſide ſmooth, as is alſo the germ. Fruit ſeſſile, the ſize of a cherry, red with ſix milk-white lines [s]: within three-celled; the pulp of the cells gelatinous-membranaceous, two-celled, green, eaſily ſeparable from the cells themſelves. Seeds ſix, one in each cell [t]. Native of Ceylon.

7. Upper leaves rugged about the edge, with pinnatifid, ſomewhat linear-ſhaped, acute diviſions. Berries ſolitary, round with a point or beak [u]: rind fleſhy, thickiſh, orange-coloured on the outſide, within ſeparate from the pulp, which is membranaceous-ſpongy, regularly divided into ſix cells, but ſometimes having only four. In each cell is one ſeed, which is ovate-globular, at the ſides and eſpecially towards the navel compreſſed to a ſharp edge, pale brown, with little briſtles or very minute ſcales ſcattered over it [x]. Native of the Cape of Good Hope. Cultivated in 1759, by Mr. Miller [y].

8. Root long, running deep, but not ſo large as that of the common ſort, covered with a brown bark. Twigs long and ſlender. The whole plant is rough. Leaves divided like thoſe of the common ſort, but leſs, they are ſtreaked with white, or have white ſpots. Flowers pale, ſtreaked, larger than in the common ſort, on long pedicels. Fruit ſemi-globular, divided at top into two parts, red when ripe, and containing two ſeeds. Native of the iſland of Crete or Candia, whence the ſeeds were ſent by Honorius Bellus to Caſpar Bauhin, who ſowed them in Zuinger's garden, having at that time intermitted the culture of his own garden [z]. Cultivated here by Mr. Miller before 1759.

9. This is a native of the Cape, where it was found by Thunberg and Maſſon. It was introduced here in 1774, and flowers in ſeptember and october [a].

10. Stems five-cornered, hiſpid, very rugged, as is the whole plant. Tendrils ſimple. Leaves blunt, unequally toothed, with the edge a little curled: petioles hiſpid. Peduncles many, axillary, ſhort. Calyx bell-ſhaped, five-toothed. Corollas ſmall, very like thoſe of *Melothria*, yellow. Fruits ſpherical.

It has altogether the ſtature of *Melothria*, but the whole plant is hiſpid and rugged, and has the ſtamens of Bryony [b].

It is a native of the Eaſt Indies, where it was found by John Gerard Koenig, M. D. and was introduced here in 1781, by Sir Joſeph Banks, Bart. It flowers from may to july [c].

11. The leaves have three angular lobes, ſharp, with very minute hairs on the upper ſurface; pale underneath, dotted-ſcaly, an inch long. It creeps on walls. Native of Japan [d].

12. This is very eaſily diſtinguiſhed from its congeners by the leaves being not in the leaſt cordate at the baſe, but ſubdecurrent along the petioles.

13. This, and the foregoing are natives of the Canary iſlands, where they were obſerved by Maſſon, and whence they were introduced here in 1779 [e].

14. This is a native of Jamaica [f].

16. Root and ſtems like thoſe of common Bryony, the latter the thickneſs of a quill at bottom and angular, towards the top deeply ſtreaked, dark-green. Leaves reſembling thoſe of the Fig, but ſmaller, deeply cut into five lobes, narrower at bottom, broader at top, narrower and ſmaller at the ends of the twigs, here and there toothletted about the edge, hairy and very rough, the upper ſurface deep green, the lower whitiſh. Berries ſomewhat larger than thoſe of the common ſort. Native of Buenos Ayres. Cultivated in the Eltham garden about 1726 [g].

[s] Linn. [t] Gærtn. [u] Linn. [x] Gærtn. [y] Hort. kew. [z] Bauh. prodr. [a] Hort. kew. [b] Linn. [c] Hort. kew. [d] Thunberg. [e] Hort. kew. [f] Swartz. [g] Dillenius.

17. Stem

17. Stem herbaceous, ſlender, ſcandent, cirrhoſe. Flowers androgynous, white, axillary. Calyx none. Corolla tubulous, with a five-parted, upright border. Filaments placed at the bottom of the corolla, with three alternate warted glands. Berry ovate, acute, ſmall, red, one-celled; containing a few ovate arilled ſeeds.

Native of China, about Canton.

18. Stem ſhrubby, grooved, climbing by trifid tendrils. Leaves cordate, ſerrate-repand, ſmooth on both ſides. Stipules ſerrate. Flowers androgynous, white, axillary, ſolitary. Berry ovate, ſharpiſh, ſmooth, yellow, an inch and half long, five-celled, and many-ſeeded.

Native of Cochinchina.

19. Stem herbaceous, middle-ſized, marked with four grooves, branching, ſcandent and cirrhoſe. Leaves cordate, toothletted, alternate, petioled. Flowers androgynous, white, large, axillary, ſolitary, on long peduncles. Calyx one-leafed, the tube at bottom cylindric, at top ovate, dilated; border five-cleft, with linear ſegments. Corolla almoſt wheel-ſhaped, fixed to the mouth of the calyx, ſegments ovate-oblong. Filaments placed on the middle of the tube of the calyx. Anther one, large, oblong-ovate, placed on the three filaments in form of a tripod. In the female flower, germ inferior, ovate-oblong, marked with ſeveral grooves. Style filiform, ſhorter than the tube. Stigma oblong, three-cornered, trifid at the tip. Berry ovate, ſharpiſh at both ends, red, ſmooth, middle-ſized. Seeds ovate-oblong, compreſſed, ſmooth. It differs from the other Bryonies, but cannot ſo well be placed in any other genus: we muſt therefore either leave it here, or conſtitute a new genus. In habit it approaches to *B. ſcabrella*.

Native of Cochinchina in hedges [a].

PROPAGATION AND CULTURE.

1, 2. The common European Bryony may be cultivated in a garden for uſe, by ſowing the berries in the ſpring, on a dry poor ſoil. In two years time the roots will grow to a large ſize, if the plants be not too cloſe. But it is common enough on dry banks and in hedges, in many parts of England.

3, *&c.* The other ſpecies being natives of the Eaſt and Weſt Indies, the Canary iſlands, or the Cape of Good Hope, require the protection of the bark or dry ſtove, according to the climate they come from.

Theſe are alſo propagated by ſeeds, ſown on a hot-bed. When they are fit to tranſplant, they ſhould be put into pots, filled with light freſh earth. When they have taken good root, they ſhould have as much air as poſſible, and may frequently be refreſhed with water in dry weather. Several of them will endure the open air in the ſummer ſeaſon; but in winter they muſt all be ſheltered, and then they ſhould have very little water. They moſtly flower in July, and in favourable ſummers will perfect their ſeeds.

8, 10, 15, 16. Some of the ſorts are annual plants; theſe muſt be raiſed on a hot-bed early in the ſpring, and when the plants are about three inches high, they ſhould be each tranſplanted into a ſmall pot filled with freſh light earth, and plunged into a hot-bed of tanners bark, obſerving to water and ſhade them until they have taken root. When the plants are grown ſo large, as to ramble about on the ſurface of the bed, and begin to entangle with other plants, they ſhould be ſhifted into larger pots, and placed in the bark-ſtove, where their branches may be trained to the wall, or againſt an eſpalier, that they may have ſun and air, which is abſolutely neceſſary for their producing fruit. When theſe plants are full of fruit, they make a pretty variety in the ſtove among other exotic plants.

[BRYONIA. See *Ciſſus, Convolvulus, Cucumis, Melothria, Rajania, Tamus, Tournefortia.*

BRYONIÆ SIMILIS. See *Dioſcorea.*

[a] Loureiro.

BRYONIOIDES. See *Ciſſus* and *Sicyos.*

BRYUM. (From Βρυω, *germino*, on account of the many branches it produces.)

A genus of Moſs, diſtinguiſhed by a capſule covered with a lid, and over that a ſmooth veil. But theſe characters it has in common with the Mnium and Hypnum, two other genera, much reſembling this. The peculiar note of the Bryum is, that the thread or little ſtem ſupporting the fructification, grows from a tubercle at the ends of the ſtem and branches.

Linneus has thirty-ſeven ſpecies. Hudſon has forty-five, beſides many varieties. Lightfoot has twenty-nine deſcribed particularly, with many good obſervations. Withering ſixty-five, beſides many varieties, well diſtinguiſhed. Alli ni has twenty-eight ſpecies. Haller enumerates thirty-three. Mr. Curtis has figured Bryum ſcoparium 1. 69.—undulatum 70.—hornum 71.—truncatulum and viridulum 2. 70.—ſubulatum 3. 66.—argenteum 67.—cæſpiticium 67.—barbatum 4. 65. Many others are figured by Dillenius, Vaillant, in Flora Danica, by Dickſon, Hedwig, *&c.*

Hedwig has ſeparated many of Linneus's Bryums from this genus, and Schreber has adopted his corrections and improvements. See n. 1638. 1640. 1642. 1643. 1644. 1645. 1647. 1648. 1654. of his genera.

The character of this genus, as it ſtands there is as follows.

CAPSULE ovate-oblong. *Periſtomium* double: *outer* with ſixteen broadiſh, ſharp teeth; *inner* membranaceous, plaited and keeled, jagged; jags broadiſh, capillary, alternate.

MALES, capitate, or diſcoid, or gemmaceous, on the ſame or a different plant.

Obs. Bryum *Hedw. Males capitate.*

Mnium *Hedw. Males diſcoid.*

Webera *Hedw. Inner Periſtomium with and without cilias.*]

BUBON. (Βουβωνες, *Hippocr. & Dioſc. From* βουβων, *inguen, the groin, or a tumour in that part, or elſewhere; which this herb was ſuppoſed to cure.*)

*Lin. gen. n.* 350. *Reirb.* 380. *Schreb.* 482. *Gærtn. t.* 23. *Juſſ.* 221.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Umbellatæ*, or *Umbelliferæ.*

GENERIC CHARACTER.

CAL. *Umbel univerſal* of about ten rays, the middle ones ſhorter. *Partial* of fifteen to twenty rays. *Involucre univerſal* five-leaved; *leaflets* lanceolate-acuminate, patulous, equal, much ſhorter than the umbel, permanent. *Partial* with rather more leaflets, of the ſame ſhape, the length of the umbellule. *Perianth proper* five-toothed, very ſmall, permanent.

COR. *univerſal* uniform: all the floſcules fertile. *Proper* of five, lanceolate, inflex petals.

STAM. *Filaments* five, ſimple, the length of the corollule. *Anthers* ſimple.

PIST. *Germ* ovate, inferior. *Styles* two ſetaceous, permanent, hardly the length of the corollule, ſpreading and reflex. *Stigmas* obtuſe.

PER. none. *Fruit* ovate, ſtriated, villoſe, bipartile, crowned.

SEEDS two, ovate, flat on one ſide and convex on the other, ſtriated, villoſe.

Obs. B. Galbanum *has many-leaved involucres.*

ESSENTIAL CHARACTER.

*Fruit* ovate, ſtriated, villoſe.

SPECIES.

1. Bubon macedonicum. *Macedonian Parſley.*
*Lin. ſpec.* 364. *Reich.* 697. *hort. cliff.* 95. *upſ.* 62. *mat. med.* 81. *Blackw. t.* 382. *Plenck, &c. t.* 194. *Gærtn. fruct.* 1. 102. *Lour. cochinch.* 179.
Apium macedonicum. *Bauh. pin.* 154. *Raii hiſt.* 463.
Daucus maced. *Riviu. pent. t.* 42.
Petroſelinum maced. *Lob. ic.* 708. *Grt.* 864. 2. *f.* 1. *emac.* 1016. *f.* 2. *Park.* 924. 1.
*Leaflets rhomb-ovate; gaſh-toothed, teeth acuminate; umbels very numerous; ſeeds rough with hairs.*

2. Bubon Galbanum. *Lovage-leaved Bubon.*
*Lin. ſpec.* 364. *Syſt.* 285. *Reich.* 697. *mant.* 335. *hort. cliff.* 96. *mat. med.* 82. *Jacqu. hort.* 3. 21. *t.* 36. *Berg. cap.* 77. *Woodv. hot. med.* 34. *t.* 12. *Plenck, ic. t.* 195.
Aniſum africanum, &c. *Pluk. alm.* 31. *t.* 12. *f.* 2.
Ferula afr. galbanifera, &c. *Herm. par. t.* 163.
*Leaflets ovate-wedge-form acute finely ſerrated; umbels few; ſeeds ſmooth; ſtem ſhrubby glaucous.*

3. Bubon gummiferum. *Gum-bearing Bubon.*
*Lin. ſpec.* 364. *Reich.* 698.
Fer. afr. galb. fol. myrrhidis. *Comm. hort.* 2. 115. *t.* 58.
*Leaflets goſſed acuminate; the lower ones broader: ſeeds ſmooth; ſtem ſhrubby.*

4. Bubon rigidius. *Stiff-leaved Bubon.*
*Lin. ſpec.* 364. *Reich.* 698. *hort. cliff.* 95.
Fer. durior, ſ. rigidis et breviſſimis foliis. *Bocc. muſ.* 2. 84. *t.* 76. *Barr. rar.* 61. *t.* 77.
*Leaflets linear.*

[5. Bubon lævigatum. *Smooth Bubon.*
*Ait. hort. kew.* 352.
*Leaflets lanceolate very obtuſely and obſcurely crenated; ſeeds ſmooth; ſtem ſhrubby.*]

DESCRIPTIONS, *&c.*

1. Macedonian Parſley ſends out many leaves from the root, the lower growing almoſt horizontally, ſpreading near the ſurface of the ground: the foot-ſtalk of each leaf divides into ſeveral other ſmaller, garniſhed with ſmooth rhomb-ſhaped leaves, which are of a bright, pale-green colour, indented on their edges. In the center of the plant ariſes the flower-ſtem, which is little more than a foot high, dividing into many branches, each being terminated by an umbel of white flowers, which are ſucceeded by oblong hairy ſeeds.

[They are of a bay-brown colour on the convex ſide, marked with five raiſed pale lines, and beſet all about with hoary hairs; on the other ſide they are flat or very ſlightly concave[a].

Loureiro ſays, that the ſtem is annual, upright, ſtraight, with many aſcending branches: the ſtem-leaves rhomb-ovate and gaſhed; the branch-leaves oblong, ſmalliſh, and irregular: the umbels many and flattiſh: the petals lanceolate-ovate and a little bent in: the fruit oblong-ovate, ſlender, and very ſtrong-ſcented.

Native of Greece and Barbary, and probably of the Eaſt Indies. It flowers with us in july, or from june to auguſt.] In warm countries it is biennial, but in England the plants ſeldom flower till the third or fourth year from ſeed; but whenever they flower they always die.

It was cultivated by John Gerarde in 1596[b].

In ſome parts of the eaſt they uſe this plant to ſcent their clothes; the ſmell is very ſtrong, and rather diſagreeable to Europeans[c].

The plant, but eſpecially the ſeed, is eſteemed to be diuretic, emmenagogue, and carminative: the ſeeds are an ingredient in Theriaca.]

2. Lovage-leaved Bubon riſes with an upright ſtalk to the height of eight or ten feet, which at bottom is ligneous, having a purpliſh bark, covered with a whitiſh powder, which comes off when handled; the upper part of the ſtalk is garniſhed with leaves at every joint, the foot-ſtalks half embracing them at their baſe: branching out into ſeveral ſmaller, like thoſe of the common Parſley, and ſet with leaves like thoſe of Lovage, but ſmaller, of a gray colour; the top of the ſtalk is terminated by an umbel of yellow flowers, which are ſucceeded by oblong channelled ſeeds, having a thin membrane or wing on their border. It flowers in auguſt, but has not produced ſeeds in England. When any part of the plant is broken, there iſſues out a little thin milk of a cream colour, which has a ſtrong ſcent of Galbanum.

[Linneus ſays, that the leaflets are ſharply ſerrate, and rather rigid: the umbels denſe and large: the involucres many-leaved: the fruit cylindric, not ſtreaked: the ſeeds even, without any membranous wing.

It is a native of the Cape of Good Hope, and was alſo cultivated by Gerarde in 1596[d].

This is the ſpecies from which the drug called Galbanum is obtained, though it is not perhaps entirely clear whether it may not alſo be gained from different ſpecies of this genus. It is obtained partly by ſpontaneous exudation from the ſtem, but more commonly by inciſion in the ſtalk a little above the root, from which it immediately flows, and ſoon becomes ſufficiently concreted for gathering. This Gum-reſin medicinally conſidered may be ſaid to hold a middle place between Aſafœtida and Ammoniacum; but it is far leſs fetid than the former. It has the credit of being highly uſeful in hyſterical caſes, and of promoting and correcting various ſecretions and uterine evacuations. Externally it has been applied to expedite the ſuppuration of indolent tumours, and eſpecially as a warm, ſtimulating plaſter. It is an ingredient in the pilulæ e gummi, the emplaſtrum lithargyri cum gummi of the London Pharm. and in the empl. ad clavos pedum of the Edin.]

3. Gum-bearing Bubon riſes with a woody ſtalk about two feet high, with leaves at each joint branching out like thoſe of the foregoing, but the leaflets are narrow and indented, like thoſe of Baſtard Hemlock. The ſtalk is terminated by a large umbel of ſmall white flowers, which are ſucceeded by ſeeds like thoſe of the former ſort.

[This alſo is a native of the Cape; and, as appears from the firſt folio edition of Mr. Miller's dictionary, was cultivated in 1731. It flowers in july[e].]

4. This is a low perennial plant, having ſhort ſtiff leaves, which are very narrow. The flower-ſtalk riſes near a foot high, and is terminated by an umbel of ſmall white flowers, which are ſucceeded by ſmall, oblong, channelled ſeeds. It flowers in june, and the ſeeds ripen in ſeptember; but it is a plant of little beauty, and of no uſe that we are acquainted with. It grows naturally in Sicily, whence Mr. Miller received the ſeeds before 1759.

[5. This was obſerved at the Cape of Good Hope by Maſſon: and was introduced here in 1774. It flowers from december to february[f].]

PROPAGATION AND CULTURE.

1. It is propagated by ſeeds, which ſhould be ſown on a bed of light ſandy earth, either early in the autumn, or in april; and if the ſeaſon prove warm and dry, the ground ſhould be ſhaded in the heat of the day, and frequently refreſhed with water, which is a ſure method to bring up the plants; but where this is not practiſed, the ſeeds often fail, or remain long in the ground. When the plants come up, they will require no other care but to be kept clean from weeds, till the beginning of october, when they ſhould be carefully taken up, and planted in a warm border of dry ground; and a few of them ſhould be put into pots, that they may be ſheltered under a frame in winter; for in ſevere froſt, thoſe which are expoſed to the open air, are frequently killed; though, in moderate winters, they will live abroad without covering.

2, 3. Theſe are propagated by ſeeds, which ſhould be ſown in pots filled with light loamy earth, as ſoon as they arrive; if it happen toward autumn, they ſhould be plunged into a bed of tanner's bark, where the heat is gone, and ſcreened from froſt in winter. In the ſpring the plants will come up, and by the middle of april will be fit to remove, when they ſhould be carefully ſhaken out of the pots, being careful not to tear off their roots, and plant them each into a ſeparate ſmall pot, filled with the ſame earth as before; then plunge the pots into the tan again, and water them to ſettle the earth to the roots of the plants, and ſhade them from the ſun in the day time, until they have taken new root; after this they muſt be inured gradually to bear the

[a] Gærtner. [b] Hort. kew. [c] Loureiro. [d] Hort. kew. [e] Ibid. [f] Ibid.

open air; into which they ſhould be removed in june, and placed with other exotic plants in a ſheltered ſituation, where they may remain till autumn, when they muſt be removed into the green-houſe, and placed where they may enjoy as much of the ſun and air as poſſible, but defended from froſt.

In winter theſe plants ſhould have but little water given them, for much wet is very injurious to them: in ſummer, when they are expoſed to the open air, they muſt be frequently refreſhed with water in dry weather; but at no time ſhould have too much wet, for that will rot their roots.

Theſe plants make a pretty variety in the green-houſe in winter, and when they are placed abroad in the ſummer with other green-houſe plants, they have a good effect, eſpecially when they are grown to a large ſize. They generally flower the third year from ſeeds, but their flowers are produced ſo late in ſummer, that the ſeeds have ſeldom time to form before the cold comes on in the autumn; in warm ſummers however, the third ſort will perfect ſeeds, if it ſtand in a warm ſheltered ſituation.

4. The fourth ſort is alſo propagated by ſeeds which ſhould have a dry ſoil and warm ſituation, where the plants will continue ſeveral years.

BUBONIUM. See *Inula*.

[BUBRŌMA. (From βους, *an ox*, and βρωμα, *food*.)
*Lin. gen. Schreb. n.* 1216. Guazuma. *Plum.* 18. *Juſſ.* 276. Theobromæ ſpec. *edit. prior. Mill. dict.* & *Houſt. reliqu. t.* 14.
Claſſ. 18. 2. Polyadelphia Dodecandria.
Nat. order of *Columniferæ*. *Malvaceæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* three-leaved: *leaflets* ovate, concave, acute, ſpreading, deciduous; two a little larger than the reſt.

COR. *Petals* five: *claws* large, narrow at the baſe, vaulted, helmet-concave, inflex at the tip, beaked, emarginate, converging, inſerted into the nectary at the baſe; *borders* ſemibifid, with linear, ſpreading ſegments.

*Nectary*, a bell-ſhaped pitcher, divided into five, equal, lanceolate, ſharp, minute, upright ſegments, ſpreading a little at the tip.

STAM. *Filaments* five, filiform, upright; bent outwards at the tip, outwardly faſtened to the nectary, alternate with its ſegments and a little ſhorter, trifid at the tip; the diviſions very ſhort. *Anthers* on each filament three, two at the tip on each ſide, the third a little lower, each placed on one of the diviſions of the filaments; the cells margined.

PIST. *Germ* ſuperior, roundiſh, hiſpid. *Style* filiform, almoſt the length of the ſtamens. *Stigma* ſimple.

PER. *Capſule* ſubglobular, woody, muricated all round with club-ſhaped tubercles, terminated by a five-rayed leafy ſtar, punched with a tenfold row of little tranſverſe dots, five-celled, valveleſs, not opening: *partitions* woody-fibrous: *cells* covered on the inſide with a thin membrane.

SEEDS very many, angular, fixed in a double row to a central, ſubglobular receptacle.

ESSENTIAL CHARACTER.

*Cal.* three-leaved. *Pet.* five, arched, ſemibifid. *Anthers* on each filament three. *Stigma* ſimple. *Capſ.* muricate, ending in a five-rayed ſtar, punched with holes, five-celled, valveleſs, not opening.

SPECIES.

1. Bubroma Guazuma. *Elm-leaved Bubroma* or *Theobroma*, or *Baſtard Cedar*.]
Theobroma Guazuma. *Lin. ſpec.* 1100. *Reich.* 3. 582. *mant.* 445. *hort. cliff.* 379. *Mill. dict. Swartz obſ.* 291. *Brown. jam.* 306. 1. *Trew. Ehret.* 40. *t.* 76.
Guazuma. *Plum. gen.* 36. *ic.* 144. [*Reliqu. houſt.* 6.
Cenchramedia. *Pluk. phyt. t.* 77. *f.* 2.
Alni fructu morifolia, &c. *Sloan. jam.* 2. 18. *Raii dendr.* 11.]

DESCRIPTION, &c.

This tree riſes to the height of forty or fifty feet in the Weſt Indies, having a trunk as large as a middle-ſized man's body, covered with a dark-brown furrowed bark, ſending out many branches toward the top, which ſpread out wide every way. Leaves oblong-heart-ſhaped, alternate, near four inches long, and two broad near the baſe, ending in acute points, ſerrate, having a ſtrong midrib, and ſeveral tranſverſe veins, of a bright green on their upper, and pale on their under ſurface, on ſhort petioles. The flowers are in axillary cluſters; they are ſmall and of a yellow colour.

[Linneus obſerves, that the branches have a nap ſcattered over them; that they have no buds; that the foliation is ſlightly involute, with the ſerratures plaited and imbricate; that the leaves are bluntly and unequally ſerrate, three-nerved, rugged, veined, ſhining, hanging down, having the appearance of thoſe of the nettle; that the ſtipules are oppoſite, ſubulate-lanceolate, approximating to the branches, with a melliferous pore on the outſide; that the petioles are round, only one-ſixth of the length of the leaves, thicker towards the leaf; that the flowers are in corymbs, like thoſe of Ayenia.

The deſcription of the flower by Swartz differs from that given above from Schreber. The calyx, according to him is four-leaved, (in Houſtoun's figure it is three-leaved, Juſſieu makes it five-parted), the leaflets bent down; the petals duſky yellow, five-nerved, pubeſcent, with lanceolate awns or briſtles inſerted into the diviſions of the petals, and longer than them, upright and purple. Nectary goblet-ſhaped, ſmaller than the petals, incloſing the piſtil, five-cornered and five-toothed. Filaments inſerted into the baſe of the nectary, and of the ſame length with it, trifid from the middle, lying under the arched petals. Anthers three, deflex, ſimple. Germ ovate, rough at the end, echinate when viewed through a magnifying-glaſs. Style the length of the ſtamens. Stigma five-cleft. Fruit hard, rugged all over with tubercles, the rind perforated like a ſieve. Seeds ovate, unequal.

It ſleeps with the leaves hanging quite down, whilſt the petioles remain entirely ſtiff and ſtraight[a].

From the ſimilitude of this tree to the Elm, it is called by the French *Orme d'Amerique* and *Bois d'Orme*. In Jamaica it is known by the name of *Baſtard Cedar*, and is peculiar to the low lands there, forming a very agreeable ſhade for the cattle, and ſupplying them with food in dry weather, when all the herbage is burned up or exhauſted. The ſeeds are very mucilaginous, but otherwiſe agreeable to the palate. The wood is light, and ſo eaſily wrought, that it is generally uſed by coachmakers (in Jamaica) in all the ſide pieces[b]. It is alſo frequently cut into ſtaves for caſks.

[A decoction of the inner bark is very glutinous, and very like that of the Elm; it is ſaid to be excellent in the Elephantiaſis, a diſorder to which the negroes are much ſubject[c].

This tree was cultivated by Mr. Miller, in 1739. It flowers here in auguſt and ſeptember[d].]

PROPAGATION AND CULTURE.

The ſeed ſhould be ſown on a good hot-bed in the ſpring, and when the plants are fit to remove, they ſhould be each planted in a ſeparate ſmall pot, and plunged into a hot-bed of tanner's bark, obſerving to ſhade them from the ſun till they have taken new root; then they ſhould be treated in the ſame way as the Coffee-tree, keeping them always in the tan-bed in the ſtove.

BUCANEPHYLLUM. See *Sarracenia*.

BUCEPHALON. See *Trophis*.

BUCEPHALOPHORUS. See *Rumex*.

BUCERAS. See *Bucida* and *Trigonella*.

BUCCAFERREA. See *Ruppia*.

[BUCHNERA. (*So named by Linneus in honour of A. E. Buchner, a German naturaliſt.*)
*Lin. gen. n.* 772. *Reich.* 833. *Schreb.* 1035. *hort. cliff.* 301. *Gerr. t.* 55. Piripea. *Aublet.* 253. *Juſſ.* 100.
Claſſ. 14. 2. Didynamia Angioſpermia.
Nat. order of *Perſonatæ*. *Pedicularet* Juſſ.

[a] Linn. [b] Browne. [c] Swartz. [d] Hort. kew.

GENERIC

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, obſcurely five-toothed, ſcabrous, permanent.

COR. monopetalous. *Tube* very long, filiform, bowed. *Border* flat, ſhort, five-cleft, equal: the two upper diviſions very ſhort, reflex; the three lower cordate, nearly equal.

STAM. *Filaments* four, very ſhort, in the throat of the corolla; the two upper ones prominent outward, ſhort. *Anthers* oblong, obtuſe.

PIST. *Germ* ovate-oblong. *Style* filiform, the length of the tube. *Stigma* obtuſe.

PER. *Capſule* acuminate, covered, two-celled, gaping at the top into two parts. *Partition* contrary.

SEEDS numerous, angular. *Receptacle* faſtened to the middle of the partition.

OBS. *The calyx and corolla vary in figure, and the ſtamens in their inſertion.*

ESSENTIAL CHARACTER.

*Cal.* obſcurely five-toothed. *Cor.* border five-cleft, equal: lobes cordate. *Capſ.* two-celled.

SPECIES.

1. Buchnera americana. *North-American Buchnera.*
*Lin. ſpec.* 879. *ſyſt.* 571. *Reich.* 3. 177.
Cortuſæ ſ. Verbaſci ſpecies, caule non ramoſo, flor. violaceis. *Gron. virg.* 74.
*Leaves toothed lanceolate three-nerved.*

2. Buchnera cernua. *Drooping Buchnera.*
*Lin. ſyſt.* 571. *Reich.* 3. 177. *mant.* 251.
*Leaves wedged five-toothed ſmooth, flowers ſpiked, ſtem ſhrubby.*

3. Buchnera cuneifolia. *Wedge-leaved Buchnera.*
*Lin. ſyſt.* 571. *ſuppl.* 288.
*Leaves wedge-form ſmooth ſeven-toothed at the end.*

4. Buchnera cordifolia. *Heart-leaved Buchnera.*
*Lin. ſyſt.* 571. *ſuppl.* 287.
*Stem four-cornered; leaves oppoſite cordate three-nerved ſerrate, racemes terminal ſubſpiked.*

5. Buchnera grandiflora. *Great-flowered Buchnera.*
*Lin. ſyſt.* 571. *ſuppl.* 287.
*Scabrous; leaves oppoſite ſeſſile oblong entire; peduncles axillary one-flowered two-leaved; calyx funnel-form.*

6. Buchnera æthiopica.
*Lin. ſyſt.* 572. *Reich.* 3. 178. *mant.* 251.
*Leaves three-toothed; flowers peduncled; ſtem ſhrubby.*

7. Buchnera capenſis.
*Lin. ſyſt.* 572. *Reich.* 3. 178. *mant.* 88.
*Leaves toothed linear; calyxes pubeſcent.*

8. Buchnera aſiatica. *Eaſtern Buchnera.*
*Lin. ſpec.* 879. *ſyſt.* 572. *Reich.* 3. 179.
*Leaves quite entire linear; calyxes ſcabrous.*

9. Buchnera pinnatifida. *Pinnatifid-leaved Buchnera.*
*Lin. ſyſt.* 572. *ſuppl.* 288.
*Leaves pinnatifid ſmooth.*

10. Buchnera viſcoſa. *Clammy Buchnera.*
*L'Herit. ſtirp. nov.* 2. *t.* 34. *Ait. hort. kew.* 2. 357. *Curtis magaz. t.* 217.
*Leaves linear-lanceolate looſely toothed ſomewhat glutinous; flowers peduncled; ſtem ſhrubby.*

11. Buchnera elongata.
*Swartz prodr.* 92.
Piripea paluſtris. *Aubl. guian.* 627. *t.* 253.
Ageratum. *Plum. ic.* 19. *t.* 17.
*Leaves entire oppoſite, calyxes ſomewhat hairy longer than the fruit.*

DESCRIPTIONS, &c.

1. Stem ſcarcely branching. Flowers in a ſpike remote from each other. Two of the ſtamens in the jaws of the corolla, and two in the middle of the tube. The herb grows black in drying. It is a native of Virginia and Canada [a].

2. This is a ſhrub, half a foot in height, branching regularly, a little jointed from the ſcars left by the leaves, purpliſh. Leaves oppoſite, but often in threes, ſeſſile, ſmooth and even, not ſhorter than the internodes, with two ſharp ſerratures on each ſide of the tip. Spikes terminating, ſolitary, oblong. Flowers ſeſſile, erect; with a linear, ſharp bracte, ſhorter than the calyx, and two ſhorter, lateral briſtles. Calyx tubular, oblong, ſemiquinqueſid, equal; the ſegments connected by a membrane. Corolla white, with a filiform tube, twice as long as the calyx, and bent back; border flat, five parted; ſegments ſubovate. Anthers within the jaws, two lower than the other two. Stigma incloſed, reflex, thickiſh. Native of the Cape of Good Hope [b].

3. This was found at the Cape by Thunberg [c].

4. This was obſerved near gardens about Tanſchaur or Tanjour in the Eaſt Indies by Koenig, on whoſe authority it is referred to this genus, from which in habit it is widely different; for it is more like the Vervains [d].

5. This is a very beautiful plant, with an upright, ſmooth, and very ſimple ſtem. Leaves five-nerved. Peduncles on the top of the ſtem, ſolitary, ſhorter than the leaves; in the middle, two oppoſite, linear-ſubulate bractes. Calyx cylindric, long, five-toothed, only half the length of the tube of the corolla, which gradually ſpreads out into a flat, large, five-lobed border; the lobes rounded. Linnæus, not having ſeen the fruit, is not certain that it belongs to this genus; and obſerves, that it is not much unlike the Gerardias, drying black like G. nigrina. It was found in South America, by Mutis [e].

6. Stem ſuffruticoſe, half a foot high, extremely branching; branches ſcarce apparently pubeſcent. Leaves oppoſite, ſeſſile, lanceolate, the ſize of thoſe of knot-graſs (Polygonum aviculare), ſmoothiſh, and generally having a tooth on each ſide below the tip. Flowers towards the tops of the branches, lateral, oppoſite. Peduncles one-flowered, longer than the leaves, erect. Calyx ſomewhat hiſpid. Corolla yellow, the tube quite as long as the calyx. Capſule ovate-oblong, ſcarcely longer than the calyx. Native of the Cape of Good Hope [f].

7. This is a ſmall plant, with the flowers in terminating ſpikes, and is allied to *Rhinanthus africanus*. It differs from the foregoing, in having a pubeſcent, viſcid ſtem, branching only at top, two remote teeth on each ſide to the leaves, and an annual root. It is alſo a native of the Cape [g].

8. The corolla has a bifid purple border, one of the ſegments almoſt upright, and trifid, the other ſpreading, and widely cordate [h]: the tube is filiform, twice as long as the calyx, bent in at the neck, incloſing the four ſtamens. The ſpikes are long, with the flowers alternate and remote. Leaves rugged, alternate, but towards the baſe oppoſite. Stem with alternate branches, and the habit of *Euphraſia*, obtuſely four-cornered. Native of Ceylon and China [i].

9. Found at the Cape of Good Hope, by Thunberg [k].

10. The flowers are purple with a yellow eye. It cannot boaſt much beauty, but it occupies little room, and flowers during moſt of the ſummer. It was found at the Cape by Maſſon, and was introduced here in 1774 [l].

11. Native of South America and Jamaica [m].

PROPAGATION AND CULTURE.

Of theſe plants the tenth only has yet been introduced into culture among us, and that grows readily from cuttings, as probably many of the others will do. The firſt ſort is hardy. The ſecond, third, fifth, ſeventh, ninth, and tenth, being natives of the Cape, will require the protection of the dry ſtove, conſervatory, or glaſs-caſe. The fourth and eighth being natives of the Eaſt Indies; the fifth and eleventh of South America and the Weſt Indies, muſt be kept in the bark ſtove, whenever they ſhall be cultivated among us.]

[BUCIDA. (*Browne had named this tree* Bucĕras, *from the ſhape of a proceſs terminating the ſpike, like a bull's horn. Linnæus, I know not why, changed it to* Bucida. *Nicander, in Alexiph. has a plant named* Βουκερας or Βουκερως.)

[a] Linn. [b] Linn. ſuppl. [c] Ibid. [d] Ibid.
[e] Linn. mant. [f] Ibid. [g] Linn. ſyſt. [h] Linn. ſpec.
[i] Linn. ſuppl. [k] Hort. kew. [l] Swartz.

*Lin. gen. n.* 541. *Reich.* 602. *Schreb.* 758. Buceras. *Brown. t.* 23. *f.* 1.
Class. 10. 1. Decandria Monogynia.
Nat. order of *Holoraceæ*. *Elæagni* Juss. p. 75.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-form, obſcurely five-toothed, ſuperior, permanent.
COR. none.
STAM. *Filaments* ten, capillary, inſerted into the baſe of the calyx, and longer than it. *Anthers* cordate, erect.
PIST. *Germ* inferior, ovate. *Style* filiform, the length of the ſtamens. *Stigma* obtuſe.
PER. *Berry* dry, ovate, one-celled, crowned with the calyx.
SEED one, ovate.

ESSENTIAL CHARACTER.

*Cal.* five-toothed, ſuperior. *Cor.* none. *Berry* one-ſeeded.

SPECIES.

1. Bucida Buceras. *Olive Bark Tree.*
*Lin. ſyſt.* 409. *Reich.* 2. 303. *amæn.* 5. 397. *Swartz obſ.* 180.
Buceras. *Brown. jam.* 221. *t.* 23. *f.* 1.
Mangle. *Sloan. jam.* 2. 67. *n.* 54. *t.* 189. *f.* 3. *Raii dendr.* 116. *n.* 2.

DESCRIPTION, *&c.*

This is a tree growing from twenty to thirty feet in height; the branches and twigs are divaricate or flexuoſe, roundiſh, ſmooth and even. The leaves are crowded at the forkings of the twigs; they are petioled, obovate, quite entire, nerved, veined, ſmooth, and the younger ones are hoary underneath. Flowers in racemes (ſpikes, *Linn. Browne*, and *Juſſ.*) from the axils of the crowded leaves, ſimple, longer than the leaves, ſpreading, many-flowered. Peduncles round, long, hoary; flowers yelloviſh. The ends of the twigs (flower-ſpikes, *Browne*) ſometimes ſhoot out into a monſtrous excreſcence, ſomething in the form of a bull's horn (whence the name of the tree); ſeldom leſs than three inches in length, though never above a line and half in diameter. Calyx hoary without, tomentoſe within. Filaments twice as long as the calyx. Anthers roundiſh, yellow. Germ flatted, with ten ſtreaks at the baſe. Style ſubulate, hirſute at the baſe.

Browne obſerves, that this tree is remarkable for its ſlender crooked branches, and the tufted diſpoſition of the leaves: that it grows to a conſiderable ſize, is reckoned an excellent timber tree, and that the bark is greatly eſteemed by the tanners.

It is a native of the Weſt Indies, in low ſwampy clayey lands near the coaſt; flowering in ſpring. In Jamaica it is called *Black Olive*; in Antigua, *French Oak*. In the French iſlands, *Grignon*.

BUCK-BEAN. See *Menyanthes*.
BUCKLER-MUSTARD. See *Biſcutella* and *Clypeola*.]
BUCK'SHORN. See *Plantago*.
[BUCKTHORN. See *Rhamnus*.
BUCK-WHEAT. See *Polygonum*.]
BUDDING. See *Inoculating*.

BUDDLEA. (*Named by Dr. Houſtoun from Adam Buddle, who is often mentioned in Ray's ſynopſis. His dried collection of Britiſh plants is preſerved in the Britiſh Muſeum.*)
*Lin. gen. n.* 140. *Reich.* 146. *Schreb.* 184. *Houſt. philoſ. tranſ. & reliq. Houſt. t.* 3. *Gærtn. t.* 49. *Juſſ.* 118.
Class. 4. 1. Tetrandria Monogynia.
Nat. order of *Perſonatæ? Scrophulariæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* very ſmall, four-cleft, acute, erect, permanent.
COR. monopetalous, bell-form, four-cleft half way, erect, three times greater than the calyx: *diviſions* ovate, ſtraight, acute.
STAM. *Filaments* four, very ſhort, placed at the diviſions of the corolla. *Anthers* very ſhort, ſimple.
PIST. *Germ* ovate. *Style* ſimple, ſhorter by half than the corolla. *Stigma* obtuſe.
PER. *Capſule* ovate, oblong, two-furrowed, two-celled.
SEEDS numerous, extremely minute; adhering to a fungous receptacle.

ESSENTIAL CHARACTER.

*Cal.* four-cleft. *Cor.* four-cleft. *Stam.* from the diviſions. *Capſ.* two-furrowed, two-celled, many-ſeeded.

SPECIES.

1. Buddlea americana. *Long-ſpiked Buddlea.*
*Lin. ſpec.* 162. *Reich.* 317. *amæn.* 5. 394. *hort. cliff.* 35. *Amm. herb.* 577. *Brown. jam.* 144. *Swartz obſ.* 47.
Verbaſci fol. minore arbor, &c. *Sloan. jam.* 2. 29. *t.* 173. *f.* 1. *Raii dendr.* 97.
*Leaves ovate.*
2. Buddlea occidentalis. *Spear-leaved Buddlea.*
*Lin. ſpec.* 162. *Reich.* 318. *Gærtn. fruct.* 1. 226. *t.* 49.
Ophioxylon. *Pluk. alm.* 270. *t.* 210. *f.* 1.
*Leaves lanceolate.*
[3. Buddlea virgata.
*Lin. ſyſt.* 154. *ſuppl.* 123.
*Leaves linear-oblong obtuſe entire, racemes terminal, branches wand-like erect.*
4. Buddlea incompta.
*Lin. ſyſt.* 154. *ſuppl.* 123.
*Leaves faſcicled ovate hoary, branches flexuoſe rigid, racemes terminal.*
5. Buddlea globoſa. *Round-headed Buddlea.*
*Hope in act. harlem. v.* 20. *par.* 2. 417. *t.* 11. *Ait. hort. kew.* 1. 150. *Curtis magaz. t.* 174.
Palquin. *Feuillée it.* 3. 51. *t.* 38.
*Leaves lanceolate; heads ſolitary.*
6. Buddlea ſalvifolia. *Sage-leaved Buddlea.*
*Ait. hort. kew.* 1. 150.]
Lantana ſalvifolia. *Lin. ſpec.* 875. *Reich.* 3. 167. *mant.* 419. *Mill. dict. n.* 12.
*Leaves lanceolate-ovate cordate wrinkled.*
[7. Buddlea aſiatica.
*Lour. cochinch.* 72.
*Leaves lanceolate-linear wrinkled ſmooth, ſpikes full.*
8. Buddlea ternata.
*Lour. cochinch.* 72.
*Leaves ternate acuminate, peduncles one-flowered.*

DESCRIPTIONS, *&c.*

1. This is a ſhrub, the height of a man (Browne ſays, four feet or better) branched, and all over hoary. Leaves ovate-lanceolate, oppoſite, ſerrate. Flowers in long, ſlender ſpikes, axillary and terminating; compoſed of little, oppoſite, many-flowered, crowded racemes. Corolla coriaceous, ſcarcely longer than the calyx; diviſions upright, yellow within, hoary on the outſide*.

Sloane ſays, that it riſes to nine or ten feet,] and Miller, ten or twelve feet in height, with a thick ſtem, covered with a gray bark, and ſending out many oppoſite branches towards the top; that the leaves are covered with a brown hairy down; and that it was ſent him by Dr. Houſtoun, from Jamaica, in 1730.

[Browne informs us, that it is uſed in emollient baths and fomentations, and is thought to have all the properties of Mullein.

Swartz doubts whether it be different from the next ſpecies.]

2. This ſort riſes much taller than the firſt, and divides into a great number of ſlender branches, which are covered with a ruſſet hairy bark, with long ſpear-ſhaped leaves, ending in ſharp points: theſe grow oppoſite at every joint; at the end of the branches are produced branching ſpikes of white flowers, growing in whorls round the ſtalks, with ſmall ſpaces between each. It has long, narrow, ſpear-ſhaped leaves growing between the ſpikes, whereas thoſe of the other ſort are naked. The leaves of this are much thinner than thoſe of the firſt ſort, and have ſcarce any down on their under ſide; the ſpikes of flowers grow more erect, and form a large looſe ſpike at the end of every branch.

* Swartz.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, obſcurely five-toothed, ſcabrous, permanent.

COR. monopetalous. *Tube* very long, filiform, bowed. *Border* flat, ſhort, five-cleft, equal: the two upper diviſions very ſhort, reflex; the three lower cordate, nearly equal.

STAM. *Filaments* four, very ſhort, in the throat of the corolla; the two upper ones prominent outward, ſhort. *Anthers* oblong, obtuſe.

PIST. *Germen* ovate-oblong. *Style* filiform, the length of the tube. *Stigma* obtuſe.

PER. *Capſule* acuminate, covered, two-celled, gaping at the top into two parts. *Partition* contrary.

SEEDS numerous, angular. *Receptacle* faſtened to the middle of the partition.

OBS. *The calyx and corolla vary in figure, and the ſtamens in their inſertion.*

ESSENTIAL CHARACTER.

*Cal.* obſcurely five-toothed. *Cor.* border five-cleft, equal: lobes cordate. *Capſ.* two-celled.

SPECIES.

1. Buchnera americana. *North-American Buchnera.*
*Lin. ſpec.* 879. *ſyſt.* 571. *Reich.* 3. 177.
Cortuſæ ſ. Verbaſci ſpecies, caule non ramoſo, flor. violaceis. *Gron. virg.* 74.
*Leaves toothed lanceolate three-nerved.*

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*Leaves wedged five-toothed ſmooth, flowers ſpiked, ſtem ſhrubby.*

3. Buchnera cuneifolia. *Wedge-leaved Buchnera.*
*Lin. ſyſt.* 571. *ſuppl.* 288.
*Leaves wedge-form ſmooth ſeven-toothed at the end.*

4. Buchnera cordifolia. *Heart-leaved Buchnera.*
*Lin. ſyſt.* 571. *ſuppl.* 287.
*Stem four-cornered; leaves oppoſite cordate three-nerved ſerrate, racemes terminal ſubſpiked.*

5. Buchnera grandiflora. *Great-flowered Buchnera.*
*Lin. ſyſt.* 571. *ſuppl.* 287.
*Scabrous; leaves oppoſite ſeſſile oblong entire; pedunclcs axillary one-flowered two-leaved; calyx funnel-form.*

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*Leaves three-toothed; flowers peduncled; ſtem ſhrubby.*

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*Leaves linear-lanceolate looſely toothed ſomewhat glutinous; flowers peduncled; ſtem ſhrubby.*

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*Swartz prodr.* 92.
Piripea paluſtris. *Aubl. guian.* 627. *t.* 253.
Ageratum. *Plum. ic.* 19. *t.* 17.
*Leaves entire oppoſite, calyxes ſomewhat hairy longer than the fruit.*

DESCRIPTIONS, *&c.*

1. Stem ſcarcely branching. Flowers in a ſpike remote from each other. Two of the ſtamens in the jaws of the corolla, and two in the middle of the tube. The herb grows black in drying. It is a native of Virginia and Canada[a].

2. This is a ſhrub, half a foot in height, branching regularly, a little jointed from the ſcars left by the leaves, purpliſh. Leaves oppoſite, but often in threes, ſeſſile, ſmooth and even, not ſhorter than the internodes, with[a] two ſharp ſerratures on each ſide of the tip. Spikes terminating, ſolitary, oblong. Flowers ſeſſile, erect; with a linear, ſharp bracte, ſhorter than the calyx, and two ſhorter, lateral briſtles. Calyx tubular, oblong, ſemiquinqueſid, equal; the ſegments connected by a membrane. Corolla white, with a filiform tube, twice as long as the calyx, and bent back; border flat, five parted; ſegments ſubovate. Anthers within the jaws, two lower than the other two. Stigma incloſed, reflex, thickiſh. Native of the Cape of Good Hope[b].

3. This was found at the Cape by Thunberg[c].

4. This was obſerved near gardens about Tanſchaur or Tanjour in the Eaſt Indies by Koenig, on whoſe authority it is referred to this genus, from which in habit it is widely different; for it is more like the Vervains[d].

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9. Found at the Cape of Good Hope, by Thunberg[k].

10. The flowers are purple with a yellow eye. It cannot boaſt much beauty, but it occupies little room, and flowers during moſt of the ſummer. It was found at the Cape by Maſſon, and was introduced here in 1774[l].

11. Native of South America and Jamaica[m].

PROPAGATION AND CULTURE.

Of theſe plants the tenth only has yet been introduced into culture among us, and that grows readily from cuttings, as probably many of the others will do. The firſt ſort is hardy. The ſecond, third, ſixth, ſeventh, ninth, and tenth, being natives of the Cape, will require the protection of the dry ſtove, conſervatory, or glaſs-caſe. The fourth and eighth being natives of the Eaſt Indies; the fifth and eleventh of South America and the Weſt Indies, muſt be kept in the bark ſtove, whenever they ſhall be cultivated among us.]

[BUCIDA. (*Browne had named this tree* Buceras, *from the ſhape of a proceſs terminating the ſpike, like a bull's horn. Linnæus, I know not why, changed it to* Bucida. *Nicander, in Alexiph. has a plant named* Βουκερας or Βουκερως.)

[a] Linn. [b] Linn. ſuppl. [c] Ibid. [d] Ibid. [e] Linn. mant. [f] Ibid. [g] Linn. ſyſt. [h] Linn. ſpec. [i] Linn. ſuppl. [k] Hort. kew. [l] Swartz.

[a] Linn.

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Class. 10. 1. Decandria Monogynia.

Nat. order of *Holoraceæ*. *Elæagni* Juss. p. 75.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-form, obſcurely five-toothed, ſuperior, permanent.

COR. none.

STAM. *Filaments* ten, capillary, inſerted into the baſe of the calyx, and longer than it. *Anthers* cordate, erect.

PIST. *Germ* inferior, ovate. *Style* filiform, the length of the ſtamens. *Stigma* obtuſe.

PER. *Berry* dry, ovate, one-celled, crowned with the calyx.

SEED one, ovate.

ESSENTIAL CHARACTER.

*Cal.* five-toothed, ſuperior. *Cor.* none. *Berry* one-ſeeded.

SPECIES.

1. Bucida Buceras. *Olive Bark Tree.*
*Lin. ſyſt.* 409. *Reich.* 2. 303. *amæn.* 5. 397. *Swartz obſ.* 180.
Buceras. *Brown. jam.* 221. *t.* 23. *f.* 1.
Mangle. *Sloan. jam.* 2. 67. *n.* 54. *t.* 189. *f.* 3. *Raii dendr.* 116. *n.* 2.

DESCRIPTION, *&c.*

This is a tree growing from twenty to thirty feet in height; the branches and twigs are divaricate or flexuoſe, roundiſh, ſmooth and even. The leaves are crowded at the forkings of the twigs; they are petioled, obovate, quite entire, nerved, veined, ſmooth, and the younger ones are hoary underneath. Flowers in racemes (ſpikes, *Linn. Browne*, and *Juſſ.*) from the axils of the crowded leaves, ſimple, longer than the leaves, ſpreading, many-flowered. Peduncles round, long, hoary; flowers yelloviſh. The ends of the twigs (ſlower-ſpikes, *Browne*) ſometimes ſhoot out into a monſtrous excreſcence, ſomething in the form of a bull's horn (whence the name of the tree); ſeldom leſs than three inches in length, though never above a line and half in diameter. Calyx hoary without, tomentoſe within. Filaments twice as long as the calyx. Anthers roundiſh, yellow. Germ flatted, with ten ſtreaks at the baſe. Style ſubulate, hirſute at the baſe.

Browne obſerves, that this tree is remarkable for its ſlender crooked branches, and the tufted diſpoſition of the leaves: that it grows to a conſiderable ſize, is reckoned an excellent timber tree, and that the bark is greatly eſteemed by the tanners.

It is a native of the Weſt Indies, in low ſwampy clayey lands near the coaſt; flowering in ſpring. In Jamaica it is called *Black Olive*; in Antigua, *French Oak*. In the French iſlands, *Grignon*.

BUCK-BEAN. See *Menyanthes*.

BUCKLER-MUSTARD. See *Biſcutella* and *Clypeola*.

BUCK'SHORN. See *Plantago*.

[BUCKTHORN. See *Rhamnus*.

BUCK-WHEAT. See *Polygonum*.]

BUDDING. See *Inoculating*.

BUDDLEA. (*Named by Dr. Houſtoun from Adam Buddle, who is often mentioned in Ray's ſynopſis. His dried collection of Britiſh plants is preſerved in the Britiſh Muſeum.*)

*Lin. gen. n.* 140. *Reich.* 146. *Schreb.* 184. *Houſt. phiſoſ. tranſ. & reliq. Houſt. t.* 3. *Gærtn. t.* 49. *Juſſ.* 118.

Class. 4. 1. Tetrandria Monogynia.

Nat. order of *Perſonatæ? Scrophulariæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* very ſmall, four-cleft, acute, erect, permanent.

COR. monopetalous, bell-form, four-cleft half way, erect, three times greater than the calyx: *diviſions* ovate, ſtraight, acute.

STAM. *Filaments* four, very ſhort, placed at the diviſions of the corolla. *Anthers* very ſhort, ſimple.

PIST. *Germ* ovate. *Style* ſimple, ſhorter by half than the corolla. *Stigma* obtuſe.

PER. *Capſule* ovate, oblong, two-furrowed, two-celled.

SEEDS numerous, extremely minute; adhering to a fungous receptacle.

ESSENTIAL CHARACTER.

*Cal.* four-cleft. *Cor.* four-cleft. *Stam.* from the diviſions. *Capſ.* two-furrowed, two-celled, many-ſeeded.

SPECIES.

1. Buddlea americana. *Long-ſpiked Buddlea.*
*Lin. ſpec.* 162. *Reich.* 317. *amæn.* 5. 394. *hort. cliff.* 35. *Amm. herb.* 577. *Brown. jam.* 144. *Swartz obſ.* 47.
Verbaſci fol. minore arbor, &c. *Sloan. jam.* 2. 29. *t.* 173. *f.* 1. *Raii dendr.* 97.
*Leaves ovate.*
2. Buddlea occidentalis. *Spear-leaved Buddlea.*
*Lin. ſpec.* 162. *Reich.* 318. *Gærtn. fruct.* 1. 226. *t.* 49.
Ophioxylon. *Pluk. alm.* 270. *t.* 210. *f.* 1.
*Leaves lanceolate.*
[3. Buddlea virgata.
*Lin. ſyſt.* 154. *ſuppl.* 123.
*Leaves linear-oblong obtuſe entire, racemes terminal, branches wand-like erect.*
4. Buddlea incompta.
*Lin. ſyſt.* 154. *ſuppl.* 123.
*Leaves faſcicled ovate hoary, branches flexuoſe rigid, racemes terminal.*
5. Buddlea globoſa. *Round-headed Buddlea.*
*Hope in act. harlem. v.* 20. *par.* 2. 417. *t.* 11. *Ait. hort. kew.* 1. 150. *Curtis magaz. t.* 174.
Palquin. *Feuillée it.* 3. 51. *t.* 38.
*Leaves lanceolate; heads ſolitary.*
6. Buddlea ſalvifolia. *Sage-leaved Buddlea.*
*Ait. hort. kew.* 1. 150.]
Lantana ſalvifolia. *Lin. ſpec.* 875. *Reich.* 3. 167. *mant.* 419. *Mill. dict. n.* 12.
*Leaves lanceolate-ovate cordate wrinkled.*
[7. Buddlea aſiatica.
*Lour. cochinch.* 72.
*Leaves lanceolate-linear wrinkled ſmooth, ſpikes full.*
8. Buddlea ternata.
*Lour. cochinch.* 72.
*Leaves ternate acuminate, peduncles one-flowered.*

DESCRIPTIONS, *&c.*

1. This is a ſhrub, the height of a man (Browne ſays, four feet or better) branched, and all over hoary. Leaves ovate-lanceolate, oppoſite, ſerrate. Flowers in long, ſlender ſpikes, axillary and terminating; compoſed of little, oppoſite, many-flowered, crowded racemes. Corolla coriaceous, ſcarcely longer than the calyx; diviſions upright, yellow within, hoary on the outſide*.

Sloane ſays, that it riſes to nine or ten feet,] and Miller, ten or twelve feet in height, with a thick ſtem, covered with a gray bark, and ſending out many oppoſite branches towards the top; that the leaves are covered with a brown hairy down; and that it was ſent him by Dr. Houſtoun, from Jamaica, in 1730.

[Browne informs us, that it is uſed in emollient baths and fomentations, and is thought to have all the properties of Mullein.

Swartz doubts whether it be different from the next ſpecies.]

2. This ſort riſes much taller than the firſt, and divides into a great number of ſlender branches, which are covered with a ruſſet hairy bark, with long ſpear-ſhaped leaves, ending in ſharp points: theſe grow oppoſite at every joint; at the end of the branches are produced branching ſpikes of white flowers, growing in whorls round the ſtalks, with ſmall ſpaces between each. It has long, narrow, ſpear-ſhaped leaves growing between the ſpikes, whereas thoſe of the other ſort are naked. The leaves of this are much thinner than thoſe of the firſt ſort, and have ſcarce any down on their under ſide; the ſpikes of flowers grow more erect, and form a large looſe ſpike at the end of every branch.

* Swartz.

It grows naturally in gullies or other low ſheltered ſpots, in the Weſt-Indies; the branches being too tender to reſiſt the force of ſtrong winds, are rarely ſeen in open ſituations.

It was ſent to Mr. Miller from Carthagena, by Dr. Houſtoun.

[The capſule is deſcribed by Gærtner as ſmall, pubeſcent with a ſhort nap, covered with the calyx and corolla, which are alſo tomentoſe, elliptic, marked with a depreſſed furrow on each ſide: partition formed of the edges of the valves bent in, doubled and narrow. Receptacle fungous, oblong, in the axis of the fruit, ſtrengthened by the partition. Seeds extremely numerous, irregular like ſawduſt, acuminate at both ends and outwardly as it were tailed, flatted a little, marked with raiſed rugged ſtreaks, pale ruſeſcent.

3. This has the habit of Hyſſop. The branches and leaves are hoary with a very fine nap [b].

4. This and the foregoing were found at the Cape of Good Hope by Thunberg [c].

5. The leaves are ſerrate, ſeſſile, acuminate, tomentoſe underneath. The flowers are of a yellow or orange colour, in cloſe peduncled heads from the axils two together on oppoſite ſides of the ſtalk and branches.

It is a native of Chili; was introduced in 1774, by Meſſ. Kennedy and Lee; and flowers in may and june [d].]

6. This riſes with a ſhrubby four-cornered ſtalk eight or ten feet high, covered with a pale looſe bark, and ſends out many ſide branches. Leaves five or ſix inches long, ſtem-claſping, acuminate, downy on the under ſide. The branches are terminated by looſe ſpikes of pale purple flowers, covered with a mealy down.

[It has ſubovate ſtipules in pairs, which led Linneus to doubt whether it belonged to the genus *Lantana*, where he had placed it, before he had an opportunity of obſerving the fruit.

It is a native of the Cape of Good Hope; and was cultivated by Mr. Miller in 1760. It flowers in auguſt and ſeptember [e].

7. Stem ſuffruticoſe, three feet high, with aſcending branches. Leaves long, not interrupted. Calyx inferior, four-parted with ſubulate, upright ſegments. Diviſions of the corolla rounded. Filaments placed below the mouth of the tube. Germ oblong. Style equal to the ſtamens. Stigma longiſh, bifid.

8. Stem ſuffruticoſe, two feet high, upright, round, branched. Leaflets lanceolate, ſerrate. Flower white, on axillary peduncles. Segments of the calyx converging. Nectary hairy. Stigma bifid. Theſe are both natives of Cochinchina [f].]

PROPAGATION AND CULTURE.

1, 2. They are propagated by ſeeds, which ſhould be obtained from the countries where they naturally grow, for they do not perfect them in England. Theſe ſhould be brought over in their capſules or pods, for thoſe which are taken out before they are ſent ſeldom grow. They ſhould be ſown in ſmall pots, filled with rich light earth, and very lightly covered with the ſame; for as theſe ſeeds are very ſmall, if they are buried deep in the ground, they periſh. The pots ſhould be plunged into a moderate hot-bed, and muſt be every third or fourth day gently watered, being very careful not to waſh the ſeeds out of the ground, by too haſty watering them. If the ſeeds are freſh and good, the plants will come up in about ſix weeks, provided they are ſown in the ſpring; and if they grow kindly, will be large enough to tranſplant in about two months after. Then they ſhould be carefully ſeparated, and each planted into a ſmall pot, filled with light rich earth, and plunged into the hot-bed again, obſerving to ſhade them from the ſun until they have taken new root, as alſo to refreſh them with water when they require it. After the plants have taken freſh root in the pots, there ſhould be freſh air admitted to them every day, in proportion to the warmth of the ſeaſon; they muſt alſo be frequently, but moderately, refreſhed with water. If the plants thrive well, they will have filled theſe ſmall pots with their roots by the middle of auguſt, at which time it will be proper to ſhift them into pots one ſize larger, that they may have time to take good root again, before the cold weather comes on. When theſe are new potted, the tan ſhould be turned over to renew the heat; and if it is wanted, ſome freſh tan muſt be added to the bed, to encourage the roots of the plants. In this bed they may remain till autumn, when they muſt be removed into the ſtove, and plunged into the tan-bed; where they muſt conſtantly remain, for they are too tender to thrive in this country, if they are not ſo treated. During the winter they muſt have but little water, and ſhould be kept warm; but in ſummer they ſhould have freſh air admitted to them conſtantly when the weather is warm, and frequently ſprinkled all over with water. With this management, the plants will flower the fourth year from ſeeds, and continue ſo to do every year after, and will make a good appearance in the ſtove.

5, 6. May be propagated by cuttings, on an old hot-bed in july, covered with a bell or hand-glaſs, and ſhaded from the ſun: in a month they will have taken root, and may then be planted in pots, placed in the ſhade, till they have taken freſh root, when they ſhould be removed to a ſheltered ſituation till the winter; and then they muſt be preſerved in the conſervatory, or dry ſtove. The fifth will flower well and live through a mild winter in an open border, provided it be in a warm ſheltered ſituation.

[BUFFONIA. (*So named from the celebrated Count De Buffon.*)

*Lin. gen. n.* 168. *Reich.* 180. *Schreb.* 225. *Juſſ.* 300. *Gærtn. t.* 129. *Sauvages.* Alſinoides *Raii.*

Claſſ. 4. 2. Tetrandria Digynia.

Nat. order of *Caryophyllei.*

GENERIC CHARACTER.

CAL. *Perianth* four-leaved, erect, permanent: *leaflets* ſubulate, keeled with membranaceous edges.

COR. *Petals* four, oval, emarginate, erect, equal, ſhorter than the calyx.

STAM. *Filaments* four, equal, the length of the germ. *Anthers* twin.

PIST. *Germ* ovate, compreſſed. *Styles* two, the length of the ſtamens. *Stigmas* ſimple.

PER. *Capſule* oval, compreſſed, one-celled, two-valved.

SEEDS two, oval, compreſſed with a ſwelling, convex on one ſide.

OBS. *Loefling obſerved four ſtamens, but afterwards retracted; Alſtroemer with attentive obſervation ever diſcovered that number; Gerard remarked ſometimes two, ſeldom three, often four ſtamens. Villars four, ſometimes two.*

ESSENTIAL CHARACTER.

*Cal.* four-leaved. *Cor.* four-petalled. *Capſ.* one-celled, two-ſeeded.

SPECIES.

1. Buffonia tenuifolia. *Small Buffonia*, or *Baſtard Chickweed.*

*Lin. ſpec.* 179. *Juſſ.* 167. *Reich.* 351. *amœn.* 1. 386. *Huſſ. angl.* 72. *With.* 164. *Ger. prov.* 400. *Sauv. monſp.* 141. *Loeſl. it.* 44. *Villars dauph.* 650. *Gærtn. fruct.* 2. 220. *t.* 129.

Polygonum. *Magn. monſp. t.* 211. *Raii hiſt.* 1026. 9.

Herniaria. *Magn. hort. t.* 97.

Alſinoides, ſ. Alſine polygonoides, &c. *Raii ſyn.* 346. *Pluk. alm.* 22. *t.* 75. *f.* 3.

DESCRIPTION, &c.

*Root* annual, long, ſlender, firmly fixed, but having few, almoſt naked, filiform fibres. *Stem* half a foot to a foot in height, upright, round, commonly branched at the baſe; branches diffuſed, procumbent: there are alſo ſmaller branches higher up, which are ſtraight, contracted, ſubdivided: the ſwelling

[b] Linn. ſuppl. [c] Ibid. [d] Hort. kew. [e] Ibid. [f] Loureiro.

ſwelling joints are more frequent at bottom, and become very diſtant towards the top; the internodes are round, where there are no branches, but ſomewhat angular about the origin of the branches which are ancipital at the baſe; they are ſmooth and ſlightly ſtreaked. *Leaves* in pairs at each joint, reſembling graſs leaves, coadunate at the baſe, with a ſhort, ſubventricoſe, three-nerved ſheath; they are linear-ſetaceous, narrowing gradually, entire, ſmooth, very finely ciliate at bottom; the lower ones are longer, the upper ones ſhorter than the internodes; when the plant is in flower they are dry and ſhrivelled, but permanent. Rudiments of leaves and branches ſometimes burſt from the axils. *Flowers* in thin, filiform ſpikes (or contracted panicles), preſſed cloſe to the branches, at the baſe of the leaves; the lateral ones ſeſſile and axillary, the terminating pedunculed. Calyx herbaceous, quadrifid; ſegments lanceolate, ſharp, concave within, white about the edge, diaphanous. Petals obtuſe, membranaceous, diaphanous, ſhorter by half than the calyx, and fixed to the baſe of it; they are in pairs, approximating and oppoſite. Stamens two, ſometimes four; filaments extremely ſlender, ſhorter than the corolla, faſtened to the receptacle. Anthers ſaffron-coloured. Capſule ſplits at top into two parts. Seeds blackiſh, retuſe at the end[a].

Linneus marks it as perennial, all other authors ſpeak of it as annual. Ray firſt noticed this little plant, in England: he alſo found it near Montpellier. It is found wild in France, Italy, and Spain: and with us it has been obſerved by Mr. Ray on the ſea coaſt of Lincolnſhire about Boſton; and by Mr. Doody on Hounſlow heath. It flowers in may and june.

BUGLE. See *Ajuga*.

BUGLOSS, BUGLOSSA, and BUGLOSSUM. See *Anchuſa*, *Aſperugo*, *Borago*, *Lithoſpermum*, *Lycopſis*.

——— Viper's. See *Echium*.

BUGLOSSUM echioides. See *Picris*.

——— littoreum. See *Scævola*.

BUGULA. See *Ajuga*, *Cleonia*, and *Teucrium*.]

BULBINE. See *Anthericum*, and *Crinum*.

BULBOCASTANUM. See *Bunium*, and *Chærophyllum*.

BULBOCODIUM. (*Βολβος a bulb, and κωδιον wool.*) *Lin. gen. n.* 407. *Reich.* 440. *Schreb.* 555. *Juſſ.* 54.

Claſſ. 6. 1. Hexandria Monogynia.

Liliaceous plants. Order *Spathaceæ*. *Narciſſi* Juſſ.

GENERIC CHARACTER.

CAL. none.

COR. hexapetalous, funnel-form: *claws* very long, linear: *throat* connecting the petals: *border* erect; petals lanceolate, concave.

STAM. *Filaments* fix, ſubulate, inſerted into the claws of the petals. *Anthers* incumbent.

PIST. *Germ* ovate-ſubulate, obtuſely three-cornered, ſuperior. *Style* filiform, the length of the ſtamens. *Stigmas* three, oblong, erect, channelled.

PER. *Capſule* triangular, acuminate, angles obſcure, three-celled.

SEEDS numerous.

ESSENTIAL CHARACTER.

*Cor.* funnel-form, hexapetalous, with narrow claws bearing the ſtamens. *Capſ.* ſuperior.

SPECIES.

1. Bulbocodium vernum. *Spring-flowering Bulbocodium.*

*Lin. ſpec.* 422. *Reich.* 2. 28. *hort. cliff.* 133. *Jungh. ic. cent.* 1. *f.* 1. *Retz. obſ.* 2. 17. *n.* 44. *t.* 1. *Curt. magaz. t.* 153.

Colchicum vernum. *Cluſ. hiſt.* 2. *app.* 203. *Park. parad.* 158. *n.* 18. *t.* 159. *f.* 7. *Ger. emac.* 160. *n.* 13. 163. *f.* 13. *Raii hiſt.* 1172. 11.—hiſpanicum. *Bauh. pin.* 69.—fl. purpureo. *Rudb. elyſ.* 2. 128. *f.* 2.

*Leaves lanceolate.*

[DESCRIPTION, *&c.*

The bulb or hybernacle, commonly called the root, reſembles that of the common *Colchicum* in ſhape, but is much ſmaller; it is covered with a dark-brown ſkin. Some time in january, or not later than the middle of february, according to the ſeaſon, the flower ſprings up incloſed within three browniſh green leaves, which opening themſelves as ſoon almoſt as they are out of the ground, ſhow their buds for flowers within them very white oftentimes, before they open far, and ſometimes alſo purpliſh at firſt appearing. There is frequently only one flower, but never more than two flowers on a root; they never riſe above the leaves, nor the leaves much higher than they, whilſt they laſt; they are ſmaller than thoſe of Colchicum; at firſt are of a pale red or deep bluſh colour, but afterwards change to a bright purple: and continue long in beauty, if the weather be not ſevere. After the flowers are paſt, the leaves grow to the length of a man's longeſt finger; and in the middle of them riſes up the ſeed-veſſel, which is ſmaller, ſhorter, and harder than that of *Colchicum*, and contains many, ſmall, round, brown ſeeds[b].

It has the habit of *Colchicum*, but differs in having only one ſtyle: from *Crocus*, which it much reſembles, it is diſtinguiſhed by the number of its ſtamens. The flower is radical, as in them; and varies in colour. Sometimes one-third part of the fructification is taken away; that is, the flower has only four petals and four ſtamens[c].

It is a native of Spain, and alſo of Ruſſia, in mountainous ſituations. Mr. Miller cultivated it in 1731[d]; but he ſays, that it has been long cultivated in gardens. It is well obſerved by Mr. Curtis, that Parkinſon gives ſuch a minute deſcription of it as to convince us that he muſt have cultivated it himſelf (1629). And ſince Johnſon, in his additions to Gerarde's herbal (1633) tells us, that the *Colchicums*, of which this is one, may for the moſt part be found in the gardens of the floriſts among us[e]; and refers ſuch as deſire their further acquaintance to the gardens of Parkinſon, Tuggie, &c.[f] We may fairly conclude, that the Spring Meadow-Saffron, as they call it, was then in our gardens, among other bulbous plants. At preſent it is a rare plant among us; the bulbs not admitting of much increaſe, and being liable to damage from froſt[g].]

PROPAGATION AND CULTURE.

This plant is propagated by offſets, in the ſame manner as other bulbous rooted flowers. The time to remove them, is ſoon after their leaves decay, but the roots may be kept out of the ground two months without prejudice at that ſeaſon. They ſhould not be removed oftener than every third year, for the roots do not multiply very faſt, by ſuffering them therefore to remain, they will flower much ſtronger, and make a greater increaſe than if they are often taken up.

It ſhould have a warmer ſituation, and may be planted in a ſouth border, in a freſh loamy ſoil, but not dunged. It may alſo be propagated by ſeeds, which ſhould be ſown in pots filled with freſh loamy earth in ſeptember, and the latter end of october, the pots ſhould be placed under a frame, to protect them from ſevere froſt; in the ſpring the plants will appear, when they may be removed out of the frame, and placed where they may have the morning ſun, but ſcreened from the ſouth. In very dry weather, they ſhould be refreſhed now and then with a little water, while their leaves continue green; but, when theſe decay, the pots ſhould be removed to a ſhady ſituation, where they may remain till autumn, obſerving to keep them clean from weeds. In october there ſhould be a little freſh earth laid on the ſurface of the other, and the pots placed in ſhelter again till the following ſpring, when they muſt be treated in the ſame manner as the former year, till their leaves decay; then the roots ſhould be carefully taken up, and tranſplanted into the borders of the flower-garden, treating them as the old roots; the ſpring following they will produce their flowers.

[a] Gerard, fl. gallo-provinc.

[b] Parkinſon parad. [c] Pallas it. 651. [d] Hort. kew. [e] Herbal, p. 162. [f] Idem. p. 161. [g] Curtis.

BULBOCODIUM. See *Anthericum*, *Ixia*, *Narciſſus*.

[BULBOCODIUM alpinum. See *Anthericum ſerotinum*.

BULL-RUSH. See *Scirpus*.

BUMALDA.

*Thunb. nov. gen. 62. jap. 8. Lin. gen. Schreb. 453. Juſſ. 381.*

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Dumoſæ*. *Rhamni* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted almoſt to the baſe: *diviſions* ovate, obtuſe, concave, a little ſhorter than the corolla.

COR. five petalled. *Petals* linear-obovate, inſerted into the germ.

STAM. *Filaments* five, inſerted into the claws of the petals, filiform, erect, rough with hairs, almoſt the length of the corolla. *Anthers* inſerted into the back, ovate, twin.

PIST. *Germ* ſuperior, conic, villoſe. *Styles* two, erect, villoſe, the length of the filaments. *Stigmas* ſimple, headed, truncate.

PER. ſeems to be a two-celled capſule.

SEEDS

ESSENTIAL CHARACTER.

*Cor.* five-petalled. *Styles* villoſe. *Capſ.* two-celled, two-beaked.

SPECIES.

1. Bumalda triſolia.
*Lin. ſyſt.* 270. *Thunb. jap.* 114.

DESCRIPTION, *&c.*

Stem ſhrubby. Branches cloſe, in all parts ſmooth. Branches obſcurely angular, jointed, purple; diviſions oppoſite, filiform, much ſpreading, leafy. Leaves oppoſite, petioled, ternate: leaflets ovate, acuminate, finely ſerrate, pale underneath, on very ſhort, capillary petioles, ſpreading very much, or reflex. Flowers terminating the branches in racemes, on capillary peduncles. Native of Japan*.]

[BUMELIA. (Βουμηλια, *Bubula fraxinus, the name of a tree in Theophraſtus. Bumelia, Plin. ſuppoſed to be a ſort of Aſh.*)

*Swartz prodr.* 49. *Lin. gen. Schreb. n.* 1736.

Claſſ. 5. 1. Pentandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved: *leaflets* roundiſh-ovate, incumbent, concave.

COR. one-petalled, five-cleft or five-parted. *Tube* very ſhort, round. *Border* five-parted; *parts* ovate, entire, ſpreading, concave; with two little ſcales at the baſe of each.

*Nectary* five-leaved: ſegments ſmaller than the corolla, at the baſe of the filaments, ſurrounding the germ, acute.

STAM. *Filaments* five, inſerted into the corolla, at the bottom of the tube, between the lower ſegments, the length of the tube. *Anthers* ovate, erect.

PIST. *Germ* ſuperior, ovate. *Style* thick, erect, ſhorter than the ſtamens. *Stigma* obtuſe.

PER. *Drupe* oval.

SEED. *Kernel* ſingle, oblong, ſmooth, with a lateral ſcar.

ESSENTIAL CHARACTER.

*Cor.* five-cleft, with a five-leaved nectary. *Drupe* one-ſeeded.

SPECIES.

1. Bumelia nigra. *Black Bumelia.*
*Swartz prodr.* 49. 1.
Achras 6. *Brown. jam.* 201.
*Branches wand-like ſpreading, leaves terminating oblong-lanceolate ſmooth, waved about the edge, branchlets flower-bearing.*
2. Bumelia pallida. *Pale Bumelia.*
*Swartz prodr.* 49. 2.
*Branches upright, leaves terminating elliptic obtuſe, flowers crowded lateral.*
3. Bumelia retuſa. *Retuſe-leaved Bumelia.*
*Swartz prodr.* 49. 3.
Achras 7. *Brown. jam.* 201.
*Leaves oppoſite wedge-ovate retuſe rigid; flowers crowded axillary.*
4. Bumelia montana. *Mountain Bumelia.*
*Swartz prodr.* 49. 4.
*Leaves ſcattered alternate oblong obtuſe, flowers axillary peduncled.*
5. Bumelia ſalicifolia. *Willow-leaved Bumelia.*
*Swartz prodr.* 50. 5.
Achras ſalicifolia. *Linn.*
*Leaves lanceolate-ovate acuminate, flowers crowded axillary and lateral.*
6. Bumelia rotundifolia. *Round-leaved Bumelia.*
*Swartz prodr.* 50. 6.
*Leaves ſuborbiculate margined veined coriaceous ſmooth on both ſides.*
7. Bumelia pentagona. *Pentagon-fruited Bumelia.*
*Swartz prodr.* 50. 7.
*Leaves lanceolate acuminate ſhining, flowers axillary, drupes five-cornered.*

DESCRIPTIONS, *&c.*

Theſe are all trees or ſhrubs, and natives of the Weſt Indies.

1. Browne calls this Baſtard Bully-Tree. He only deſcribes the fruit, which he ſays is ſmall, ſmooth, and ſcattered over the branches, containing roundiſh ſeeds, marked with a very ſmall ovate ſcar. It is a native of Jamaica.

2. This alſo is a native of the ſame iſland.

3. Browne calls this the Mountain Baſtard Bully-Tree; and ſays, that it has a ſmall ſmooth fruit. It is a native of Jamaica and other iſlands of the Weſt Indies.

4. Native of Jamaica.

5. This has been already noticed under the name of *Achras ſalicifolia*, which ſee.

6, 7. Natives of the Weſt Indies: the laſt, of the iſland of St. Vincent.]

BUNIAS. (*Βουνος, a hill.*)

*Lin. gen. n.* 823. *Reich.* 887. *Schreb.* 1070. *Gærtn. t.* 142. *Juſſ.* 241. Erucago. *Tournef.* 103.

Claſſ. 15. 2. Tetradynamia Siliquoſa.

Nat. order of *Siliquoſæ*. *Cruciferæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-leaved; *leaflets* ovate-oblong, ſpreading, deciduous.

COR. tetrapetalous, cruciform. *Petals* obovate, twice as long as the calyx: *claws* attenuated, erect.

STAM. *Filaments* ſix, the length of the calyx; of which two oppoſite a little ſhorter. *Anthers* erect, bifid at the baſe.

PIST. *Germ* oblong. *Style* none. *Stigma* obtuſe.

PER. *Silicle* irregular, ovate-oblong, four-ſided, the angles with an acumen or two, not burſting, deciduous.

SEEDS few, one under each acumen of the ſilicle, roundiſh.

ESSENTIAL CHARACTER.

*Silicle* deciduous, four-ſided, muricated with unequal acuminate angles.

SPECIES.

[1. Bunias cornuta. *Horned Bunias.*
*Lin. ſpec.* 935. *Reich.* 3. 285.
Burſa paſtoris orientalis, drabæ fol., ſil. cornutis. *Tourn. cor.* 15.
*Silicles divaricate, two-horned, ſpiny at the baſe.*
2. Bunias ſpinoſa. *Thorny Bunias.*
*Lin. ſyſt.* 603. *Reich.* 3. 286. *mant.* 96. *Gærtn. fruct.* 2. 290.
Zilla myagroides. *Forſk. ægypt.* 121. *n.* 74. *ic. t.* 17. *f.* A.
Braſſica ſpinoſa. *Alp. exot.* 201. *t.* 200. *Bauh. pin.* 111. *prodr.* 54. *fig. Raii hiſt.* 797. *Park.* 270.
Crambe ſpinoſiſſ. arabica, &c. *Shaw. afr.* 179.
*Racemes ſpineſcent.*]
3. Bunias Erucago. *Prickly-podded Bunias.*
*Lin. ſpec.* 935. *Reich.* 3. 286. *hort. cliff.* 340. *upſ.* 182. *Gærtn. fruct.* 2. 291. *Hall. helv. n.* 528. *Sauv. monſp.* 285. *Jacq. auſtr.* 4. *t.* 340. *Allion. pedem. n.* 939. *Villari dauph.* 308.
Myagrum Erucago. *Crantz. cruc.* 103. *n.* 7.
Sinapi echinatum. *Bauh. hiſt.* 2. 858.

Eruca

* Thunberg.

Eruca monſpeliaca, fil. quadrangula echinata. *Bauh. pin.* 99. *prodr.* 41. *fig. Rati hiſt.* 804. *Park.* 821. *f.* 3.
*Silicles four-cornered, angles two-creſted.*

4. Bunias orientalis. *Oriental Bunias.*
*Lin. ſpec.* 936. *Reich.* 3. 286. *hort. upſ.* 186. *Gmel. ſib.* 3. 256. *n.* 16. *t.* 57. *Gærtn. fruct.* 2. 291.
Crambe orient. dentis leonis fol. erucaginis facie. *Tourn. cor.* 41.
*Silicles ovate, gibboſe, warted.*

[5. Bunias cochlearioides. *Scurvy-graſs Bunias.*
*Lin. ſyſt.* 603. *Murr. in comm. gott.* 1777. *p.* 42. *t.* 3.
*Silicles cordate-ovate, even, inflected.*]

6. Bunias Cakile. *Sea Rocket.*
*Lin. ſpec.* 936. *Reich.* 3. 287. *mant.* 430. *fl. ſuec. n.* 613. *Hudſ. angl.* 298. *With.* 716. *Lightf. ſcot.* 363.
Raphanus. *Lin. hort. cliff.* 340. *Gron. virg.* 98. *Sauv. monſp.* 285.
Cakile maritima. *Scop. carn. n.* 844.
C. ſerapionis. *Lob. ic.* 223.
C. ſ. Eruca marina & Raphanus marinus. *Bauh. hiſt.* 2. 867. *fig.* 868. *Raii ſyn.* 307.
Eruca maritima italica, fil. haſtæ cuſpidi ſimili. *Bauh. pin.* 99.
E. marina. *Ger. emac.* 248. 5. *Raii hiſt.* 840.—anglica. *Park.* 821. 1. *Pet. herb. t.* 46. *f.* 6.
E. fil. toroſa. *Mor. hiſt.* 2. *ſ.* 3. *t.* 6. *f.* 20.
β. Cakile ſ. Eruca maritima latifolia. *Bauh. hiſt.* 2. 868.
7. *With pinnatifid linear fleſhy leaves.*
δ. *With lanceolate gaſhed fleſhy leaves.*
*Silicles ovate even ancipital.*

[7. Bunias myagroides. *Myagrum-like Bunias.*
*Lin. ſyſt.* 603. *Reich.* 3. 287. *mant.* 96.
*Silicles two-jointed, ancipital, toruloſe above, leaves pinnate with reflected finuſes.*

8. Bunias ægyptiaca. *Egyptian Bunias.*
*Lin. ſyſt.* 603. *Reich.* 3. 288. *Aſſ. petrop.* 12. 509. *t.* 9. *Jacqu. hort.* 2. *t.* 145. *Gouan. illuſtr.* 45. *Gærtn. fruct.* 2. 289.
*Silicles four-cornered, wart-muricate on every ſide, leaves runcinate.*

9. Bunias balearica. *Minorca Bunias.*
*Lin. ſyſt.* 603. *Reich.* 3. 288. *mant.* 429. *Jacqu. hort.* 2. *t.* 144. *Gouan. illuſtr.* 45. *t.* 20. B.
*Silicles bifpid, leaves pinnate, leaflets ſlightly toothed.*

DESCRIPTIONS, &c.

The ſpecies of *Bunias*, properly ſo called, have the fruit ſpherical, wrinkled or echinate, one or two-celled, with one or two ſeeds, and not opening. *Erucago* of Tournefort has the fruit four-cornered, rugged-creſted at the angles, two-celled above and below, not opening, with one ſeed in each of the four cells. *Cakile* of Tournefort, has the fruit lanceolate and two-jointed, with one ſeed in each joint. Monſ. Lamarck has united Bunias and Erucago, without Cakile, to the genus *Myagrum*. Might not *Bunias*, *Erucago*, and *Cakile* rather make three diſtinct genera[a]?

1. This is a very ſingular plant. It has a ſilicle tranſverſely oval, finiſhing on each ſide in a horn or very long and ſtrong ſpine, ſo that the ſilicle reſembles a pair of horns: in the middle of the ſilicle are four ſmall ſpines, directed different ways[b]. Native of the Levant and Siberia.

2. This is an annual plant. Stems a foot high, upright, branching, ſubdivided, round, ruſhy, very ſmooth and even, green. Leaves ovate-oblong, blunt, ſomewhat angular, even, petioled. Racemes upright, ſtiff, rigid, terminating the ſmall branches, ending in compound ſpines, by the ſide of which are a few ſeſſile flowers. Calyx oblong, cloſed. Petals lanceolate, whitiſh-violet. Germ heart-ſhaped: ſtyle cylindrical, the length of the germ, permanent: ſtigma thickiſh. Silicle heart-ſhaped twin; or rather a ſuberoſe, even, ſharp drupe, incloſing a two-celled, hexangular nut, two of the oppoſite angles broader than the other two, with one roundiſh ſeed in each cell[c].

Gærtner calls the fruit a drupaceous ſilicle, drawn up from a turgid, four-cornered, ſmooth belly, into a pyramidal point, and of a pale ſtraw colour: rind thick, ſuberous: ſhell bony, with ſix flatted angles, the two middle oppoſite ones narrower than the reſt. Seeds ſolitary, ovate, or roundiſh, plano-convex. Cotyledons conduplicate, leafy. Radicle inflex, lying on the groove of the duplicature, ſuperior. Native of the Levant.]

3. This alſo is an annual plant, ſending out many branches, which ſpread, and incline towards the ground. The leaves are glaucous, and deeply divided into many ſegments, almoſt like thoſe of Swine's Creſs. The flowers are produced ſingly from the axils of the leaves, towards the extremity of the branches; they are ſmall, and of a pale yelloviſh colour. [A large gland ſurrounds the ſhorter ſtamens, and an eminent rim the longer ones. The fruit is ſhort and echinate, with four wings, divided internally into four cells, containing one round, tailed ſeed in each cell: but one of the cells is ſometimes wanting[d].

Gærtner deſcribes the fruit, as a ſmall ovate four-cornered drupaceous ſilicle, two of the ſides narrower and warted-muricate; the two wider ones marked with a double elevated ſtreak, which is crenulate or ſlightly tubercled: rind very thin and membranaceous: ſhell bony, muricate, two-celled, the cells collateral or placed ſide by ſide. Seeds ſolitary, ovate, plano-convex, rufeſcent.

Native of the South of France, Switzerland, Auſtria, and Italy. It was cultivated here in 1640[e].]

4. Root perennial; with an annual ſtalk. There are many oblong leaves, ſpreading on every ſide near the ground, and deeply jagged on their edges, like thoſe of Dandelion. From among theſe ariſe the ſtalks, upwards of two feet high, ſending out branches, and at each joint one oblong ſharp-pointed leaf, eared at the baſe, and ſitting cloſe to the ſtalk. The branches are terminated by long looſe ſpikes of yellow flowers ſhaped like thoſe of the Cabbage, and ſucceeded by ſhort, oval, rough pods, ending in a point, and incloſing one round ſeed.

[Gærtner calls the fruit a ſubglobular or ovate-oblong drupaceous ſilicle; it is gibboſe and warted, ending in a ſhort ſtyle; the rind is fungoſe, and of a whitiſh ſtraw colour; the ſhell bony, ſmooth on the outſide, within divided into two cells, one over the other, but the upper one uſually obliterated in fruits that are ſubglobular. Seed rufeſcent. Cotyledons or lobes oblong, ſpirally convoluted.]

It grows naturally in the Levant, whence Tournefort ſent the ſeeds to the royal garden at Paris. [Alſo in Ruſſia. It was cultivated in 1739, by Mr. Miller, and flowers from may to july[f].

5. The ſeeds of this ſpecies were ſent to Murray by Dr. Pallas, who found the plant in low meadows, near the Jaik.

It is about two feet in height. The root ſlender, and fibroſe at the ſides. The ſtem and branches cornered or obſcurely furrowed, ſmooth, and branching from near the root. The branches alternate, ſlender, lengthened, ſpreading, lax, divided. Leaves in general oblong, veiny, and of an appearance between ſinuated and toothed. The racemes are terminal and long on the ſtem and branches; the calyx ſpreading, the corolla white and veiny. The ſilicle cordate-ovate, gloſſy and ſharp.

6. Sea Rocket is a ſmooth, glaucous, annual plant, with a ſaltiſh taſte. Root ſlender, woody, running deep into the ſand, and terminated by a few rigid fibres. Stem woody, about a foot high, often much more, divided from the baſe into widely divaricated branches. Leaves oblong-wedge-ſhaped, ſeſſile, deeply cut or pinnatifid, fleſhy. The flowers grow in ſhort ſpikes or cluſters, alternately on ſhort pe-

[a] Juſſieu. [b] Linn. [c] Linn. [d] Haller. [e] Hort. kew. from Park. [f] Hort. kew.



dicels,

dicels, and are of a pale red or fleſh colour. The pods are ſhort but large and fleſhy, oval-pointed, two-celled, with one or two roundiſh ſeeds in each. The long compreſſed ſtyle forms afterwards the beak of the pod[g]. This falling off leaves a cloven baſe behind. The varieties are conſtant, but the leaves of all are fleſhy, and the fructifications alike[h].

It is a native of the ſea coaſt in many parts of Europe and North America: with us on the coaſts of Norfolk, Suffolk, Scotland, and Ireland, in deep ſand, frequently near high water mark: flowering in june and july.

7. Root annual. Stem ſtraight, two feet high, even, panicle-branched. Lower leaves pinnate or bipinnate, broader, not fleſhy, deep green, even; diviſions or pinnas oblong, toothed: the upper ones very like theſe, but narrow, linear: all have ſinuſes reflected down at the egreſs of the pinnas. Racemes terminal, long, ſtraight. Flowers ſubſeſſile. Calyx cloſed. Petals quite entire, pale purple. Style enſiform. Stigma headed, purple. Silique ſubcylindric, very ſhort, rigid, approximating to the rachis, on a ſhort peduncle; conſiſting of two joints, the lower cylindric, bivalve, one-ſeeded (ſeldom with two ſeeds), the valves marked with one ſtreak, the upper compreſſed, ſubancipital, one-ſeeded (ſeldom with two ſeeds) obtuſe, with a protuberant ear on each ſide. Native of Siberia[i].

8. Root annual. Stem a foot high, branched, hiſpid at bottom, ſmoother at top. Leaves runcinate, a little toothed, even; a few hairs underneath on the petioles. Racemes ſolitary, terminal, long. Flowers pedicelled. Calyx yelloviſh. Petals dark yellow, obtuſe, ſpreading, with erect claws. Filaments yellow, diſtant. Germ ovate, four-cornered, green. Stigma headed, yellow. Silicle different from thoſe of the next ſpecies, in being neither ſubulate-beaked, nor hairy[k].—Gærtner thus deſcribes it: the ſilicle is drupaceous, ſmall, ovate, four-cornered; the two narrower ſides warted and muricate, the two broader marked with a longitudinal double elevated ſtreak, which is crenulate or ſlightly tubercled: rind very thin, membranaceous: ſhell bony, muricate, with two cells placed ſide by ſide. Seeds ſolitary, ovate, convex on one ſide, flat on the other, ruſeſcent. Native of Egypt. Introduced in 1787, by Mr. Zier. It flowers in auguſt[l].

9. Root annual. Stem a foot high, very much branched, ſpreading, angular, even. Leaves petioled, pinnate; pinnas lanceolate, ſinuate, obtuſe, even. Peduncles racemed, very long, erect. Pedicels ſhorter than the flowers. Calyx cloſed, even, lanceolate, concave, teſtaceous. Corolla yellow; petals oblong, obtuſe, the length of the calyx. Silicles globular, echinated on every ſide with weak ſpines crowded cloſe together; beak ſubulate, ſtiff, longer than the ſilicle. Cotyledons large, ſlightly two-parted, like thoſe of Convolvulus, with roundiſh lobes. It reſembles the ſeventh: the ſilicle is like that of the third, only wholly echinated except the beak[l]. Native of Majorca and Minorca. Introduced 1781, by P. M. A. Brouſſonet, M. D.[m]]

PROPAGATION AND CULTURE.

Theſe plants are all propagated by ſeed, to be ſown where they are deſigned to remain, either in the beginning of *april* or in autumn. When the plants come up they ſhould be thinned to the diſtance of one foot from each other; and after that they will require no other care but to keep them clean from weeds. They are all hardy enough to flower in the open air, but ſome of them will ſcarcely perfect their ſeeds unleſs they be ſown in the autumn.

BUNIAS. See *Braſſica*.

BUNIUM. (*Bουνὸς Dioſcor.* Bunium. *Plin. from* Bουνὸς, *a hill; from its affecting high ſituations.*)
*Lin. gen. n.* 335. *Reich.* 366. *Schreb.* 468. *Juſſ.* 223. Bulbocaſtanum. *Tournef.* 161.

Claſſ. 5. 2. Pentandria Digynia.
Nat. order of *Umbellatæ*, or *Umbelliferæ*.

GENERIC CHARACTER.

CAL. *Umbel univerſal* manifold, with rays fewer than twenty: *partial* very ſhort, crowded.
*Involucre univerſal* many-leaved, linear, ſhort: *partial* ſetaceous, the length of the umbellule.
*Perianth proper* ſcarcely apparent.
COR. *univerſal* uniform: floſcules all fertile.
*Proper* of five, inflex-cordate, equal petals.
STAM. *Filaments* five, ſhorter than the corolla, ſimple. *Anthers* ſimple.
PIST. *Germ* oblong, inferior. *Styles* two, reflex. *Stigmas* obtuſe.
PER. none. *Fruit* ovate, bipartile.
SEEDS two, ovate, convex on one ſide, flat on the other.

ESSENTIAL CHARACTER.

*Cor.* uniform. *Umb.* crowded. *Fruits* ovate.

SPECIES.

1. Bunium Bulbocaſtanum. *Earth-nut*, or *Pig-nut*. *Lin. ſpec.* 349. *Reich.* 671. *hort. cliff.* 91. *Huiſſ. angl.* 122. *With.* 275, 276. *Lightf. ſcot.* 136. *Curtis lond.* 4. 24. *Hall. helv. n.* 783. *Pollich pal. n.* 274. *Sauv. monſp.* 256. *Oed. dan. t.* 220. *Allion. pedem. n.* 1362. *Villars dauph.* 2. 602. *Gouan. illuſtr.* 10. *Plenck, ic. t.* 182.
Bulbocaſtanum majus apii folio. *Bauh. pin.* 162. *Bauh. hiſt.* 3. 2. 30. *Mor. hiſt. ſ.* 9. *t.* 2. *f.* 1. *Pet. herb.* 25. 9. *Ger.* 906. 1. *emac.* 1064. 1. 2. *Rai hiſt.* 440. *ſyn.* 209.
Nucula terreſtris. *Leb. obſ.* 429. *Park.* 892. 1, 2. *f.* 893.
Bulb. minus. *Bauh. pin.* 162, 2. (This is given as a ſynonym to *Chærophyllum*, by Reichard.)

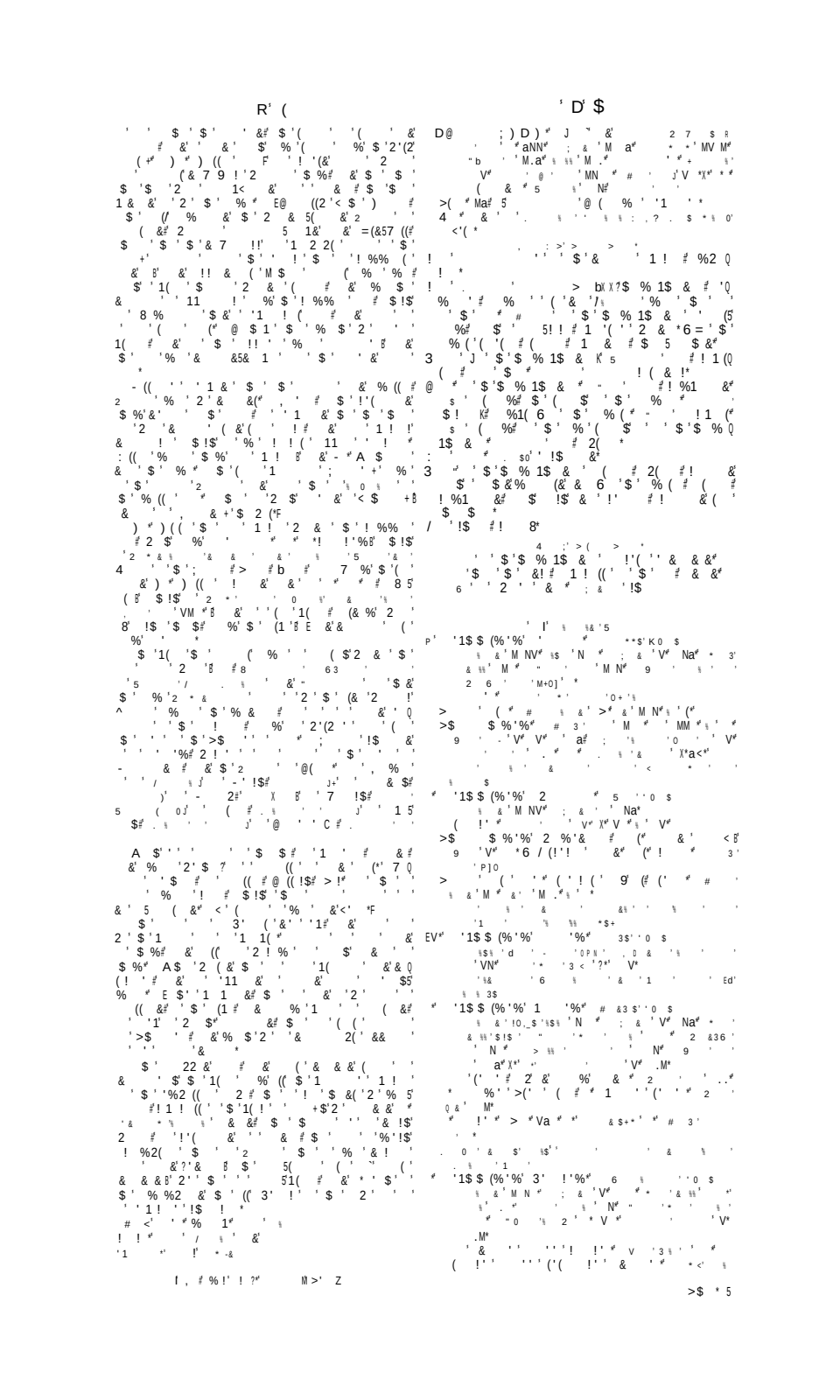
DESCRIPTION, &c.

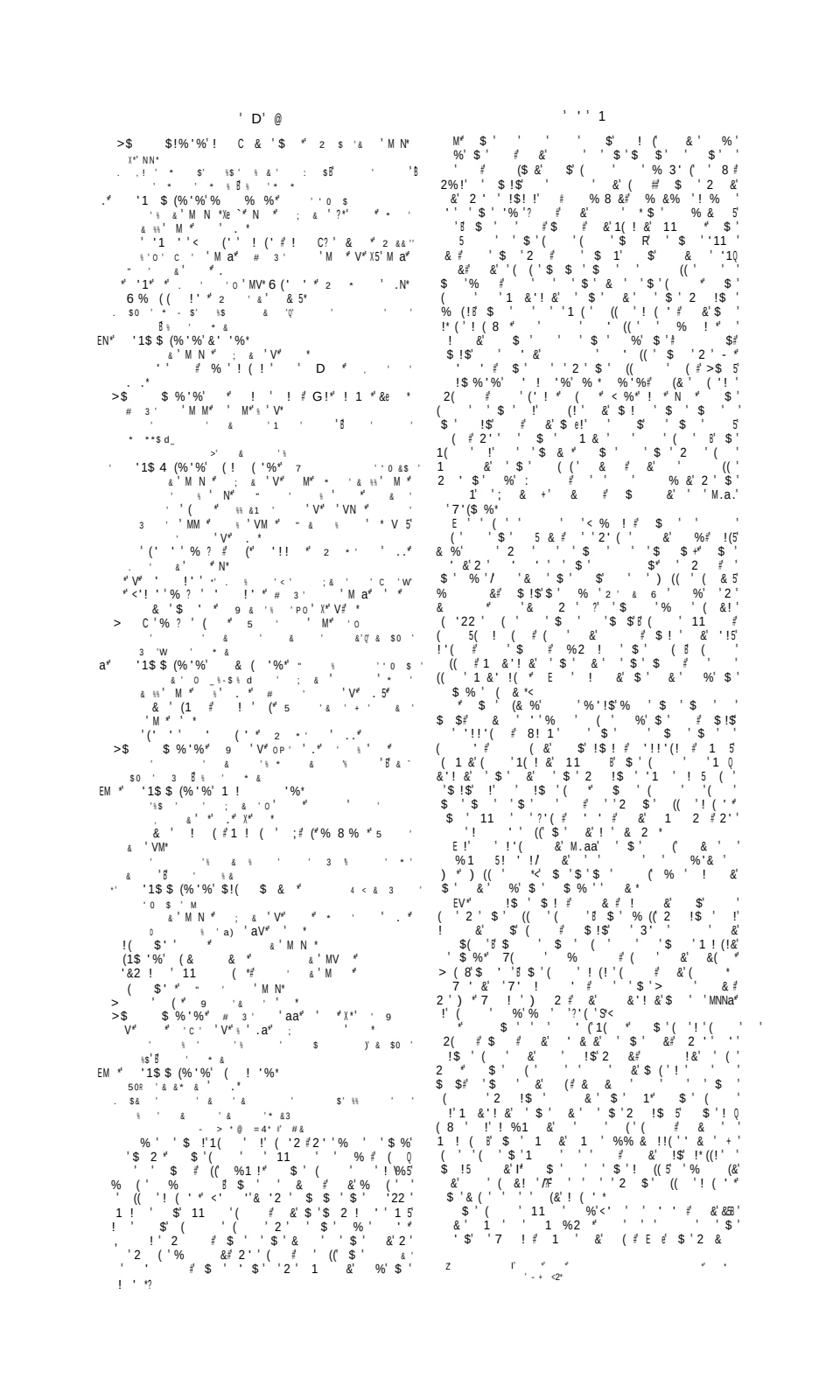
Root perennial, tuberous, on the outſide of a cheſnut colour, within white, ſolid, putting forth ſlender fibres from the ſides and bottom, of an agreeable ſweetiſh taſte, lying deep in the ground. Stem from one to two feet high, upright, round, ſtiffiſh, the thickneſs of a crow quill, ſlightly ſtriated, ſmooth, throughout of a green colour and branched. Radical leaves on long petioles; ſtem leaves ſeſſile, all very finely divided, deep green, the folioles edged with prickly hairs, viſible only by a glaſs. Sheath ſhort, grooved, ſmooth, the edge membranous and whitiſh. Umbels ſeveral; univerſal rays from ſeven to twelve; partial about twelve. Univerſal and partial involucre often wanting. Filaments longer than the corolla, deciduous. Styles white, nearly upright. Seeds oblong-ovate, ſmooth and ſomewhat aromatic[n].

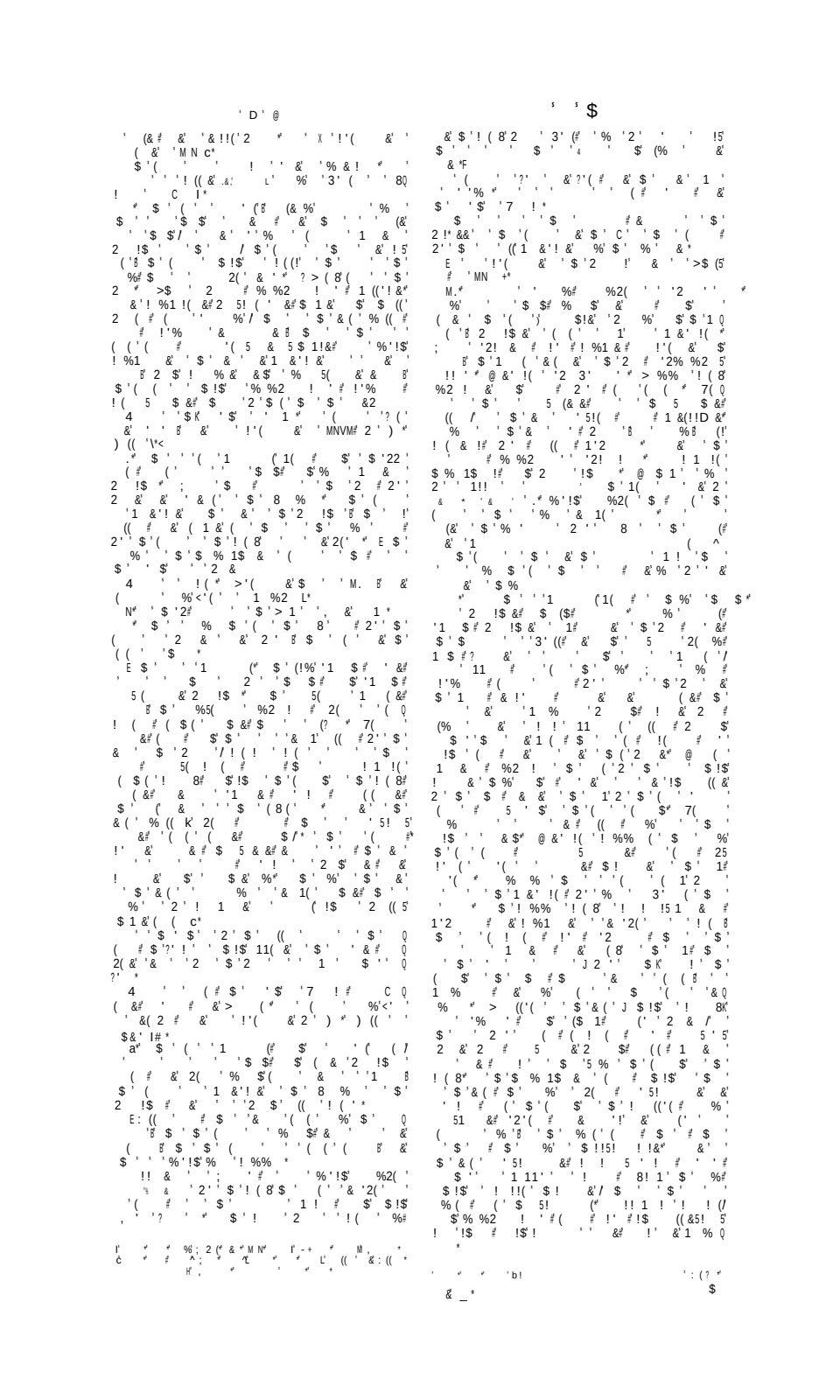
To the above deſcription we may add, that the root commonly grows four or five inches deep in the earth, the ſtem from the ſurface tapering towards it, flexuoſe or bending to and from, and of a white colour[o]; that the ſtem is but little branched; the root-leaves tripinnate, with ſmall lanceolate leaflets, which are ſimple or trifid, the extreme leaflet trifid; the ſtem-leaves bipinnate, with ſimple or linear leaflets, not wider than the nerve[p]: that the univerſal involucre conſiſts ſeldom of more than one, two, or three very ſlender leaves, but in moſt inſtances is altogether wanting: that the partial is moſtly ſhorter than the umbel, and conſiſts of three or four very ſmall lanceolate leaves; that the partial umbel has ſometimes ſixteen and even twenty rays: that the petals are lanceolate, entire, but rolled inwards ſo as to appear as if they were emarginate; that the filaments are longer than the petals, and the piſtils at firſt cloſe, afterwards divaricate, but never bent back[q].

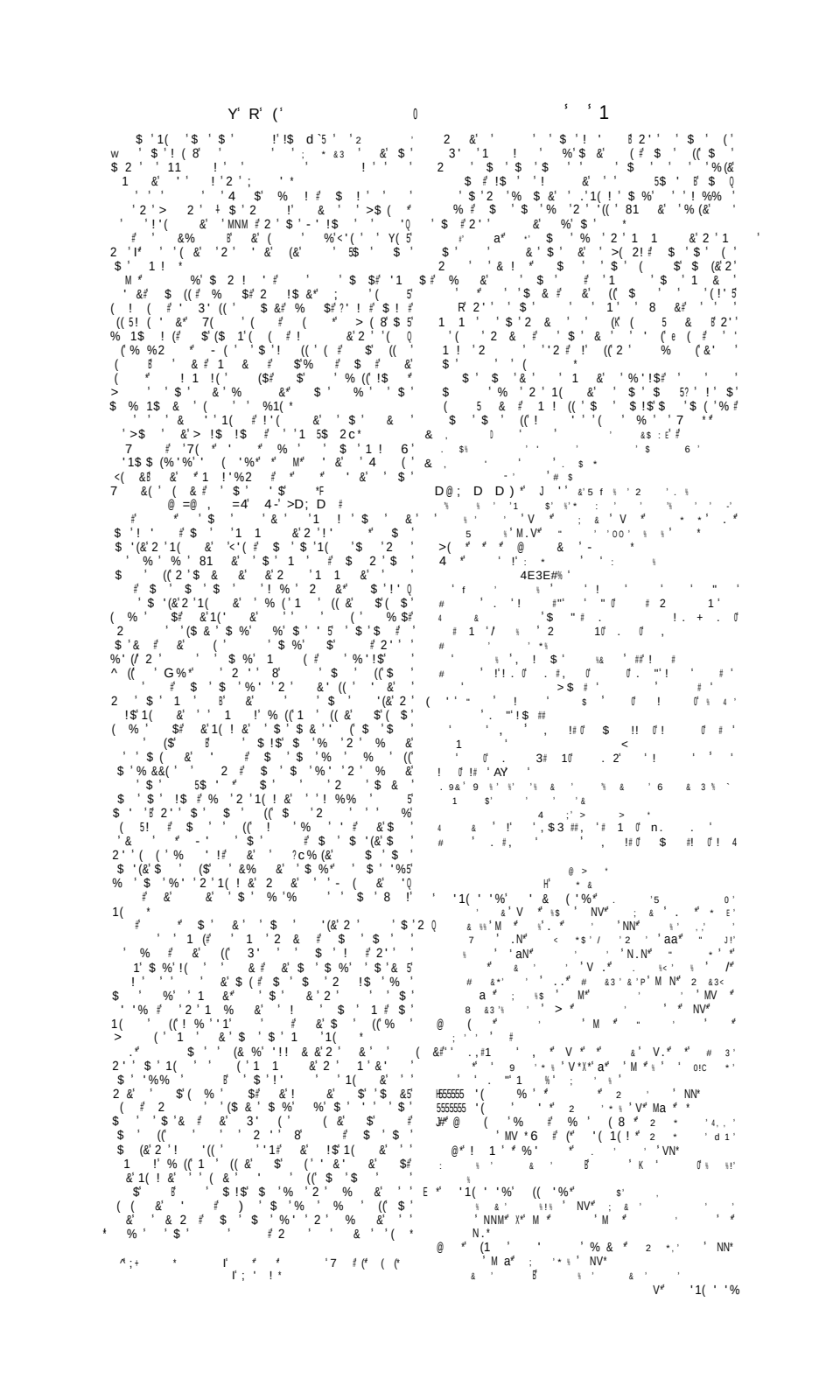
This deſcription and theſe remarks apply to the plant as uſually found in Britain. That *Bunium* which is moſt common in many parts of the continent is ſomewhat different from ours: the ſegments of the leaf are not ſo fine, and nearer to Parſley, whereas ours approach to Fennel[r]. The root is not

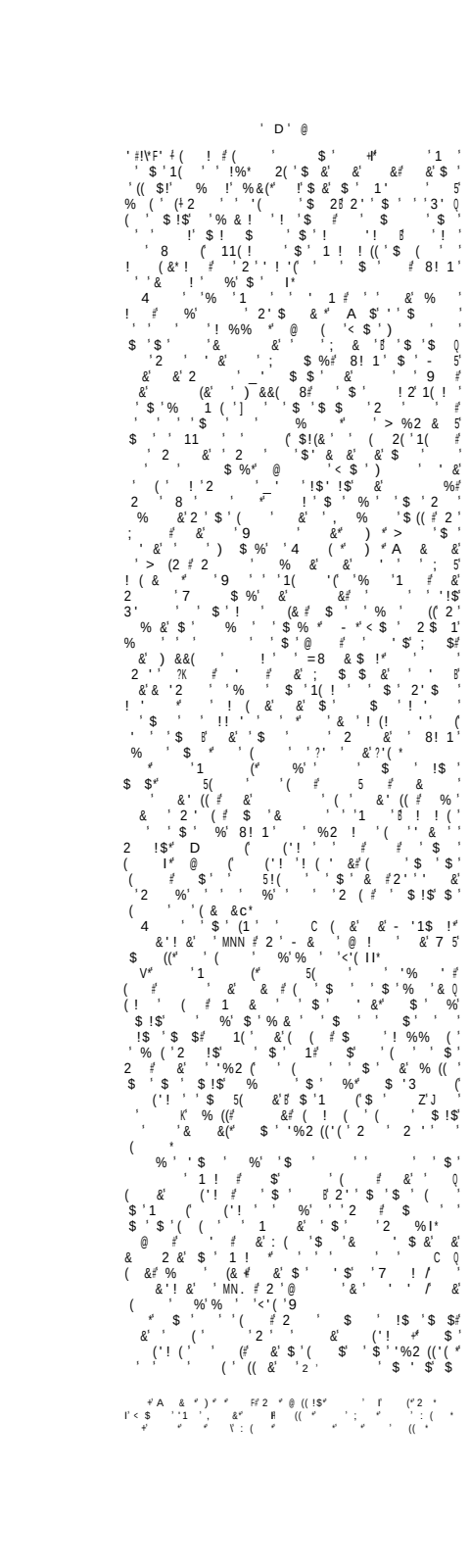
[g] Woodw. M. S. Lightf. Linn. [h] Linn. [i] Ibid. [k] Hort. kew. [l] Linn. [m] Hort. kew.
[n] Curtis, [o] Parkinſon. [p] Woodw. M. S. [q] Withering. [r] Mart. Tourn. Par. t. 128.



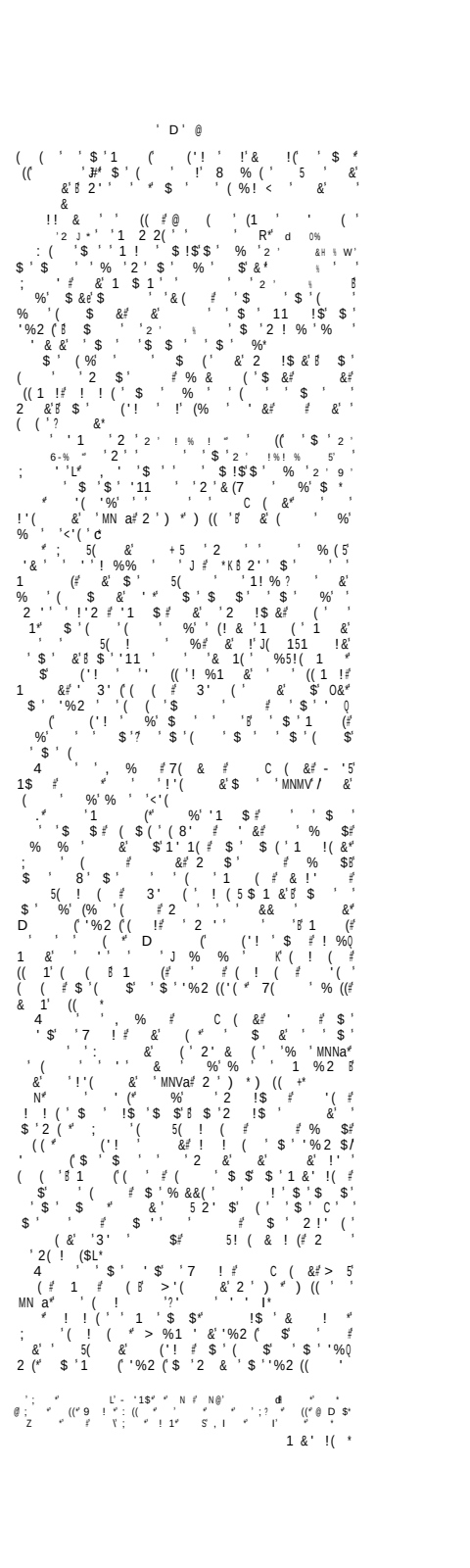


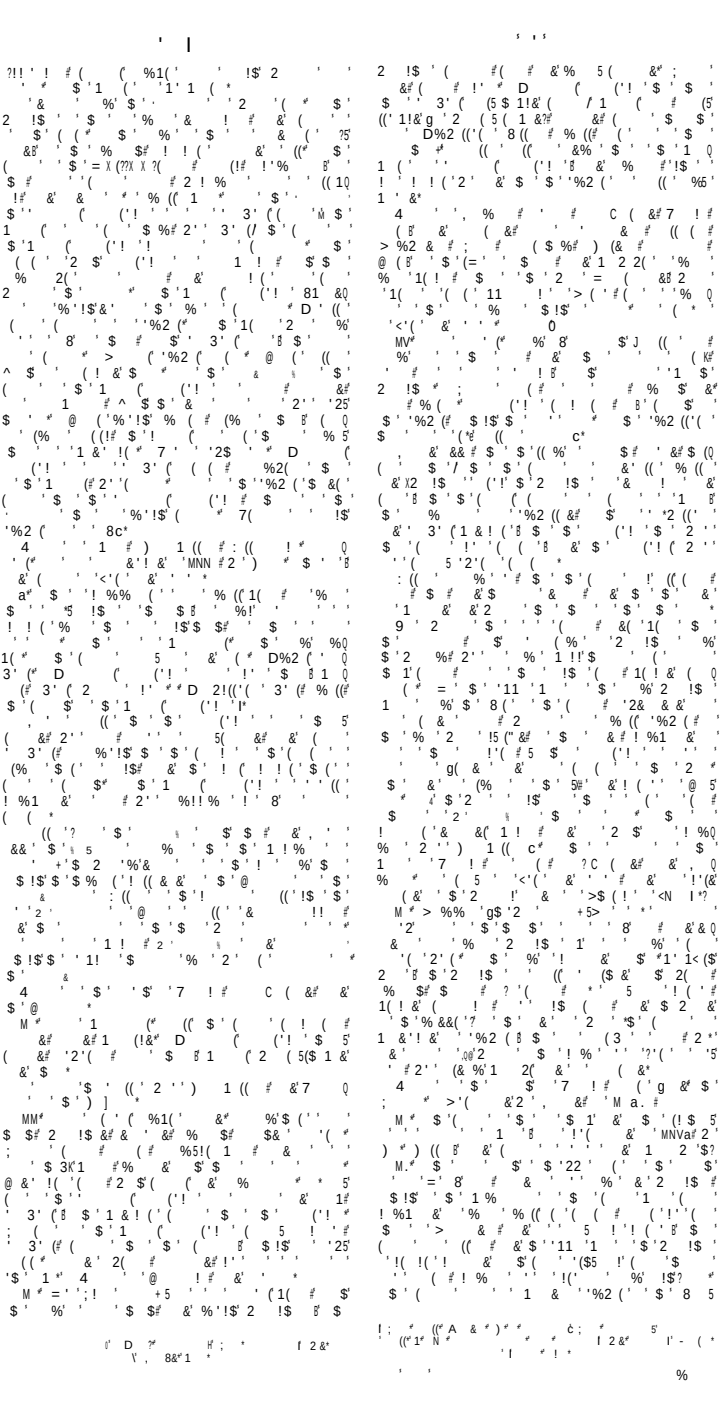


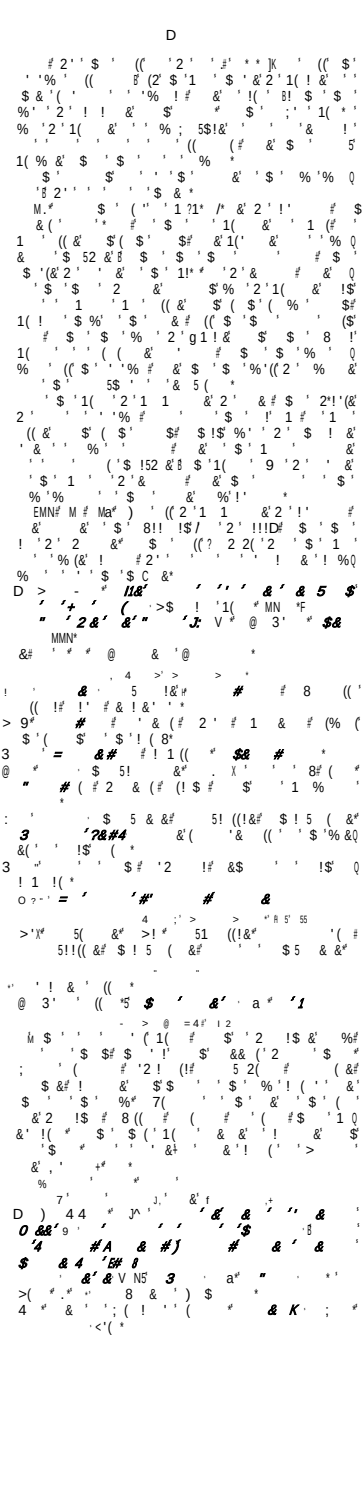


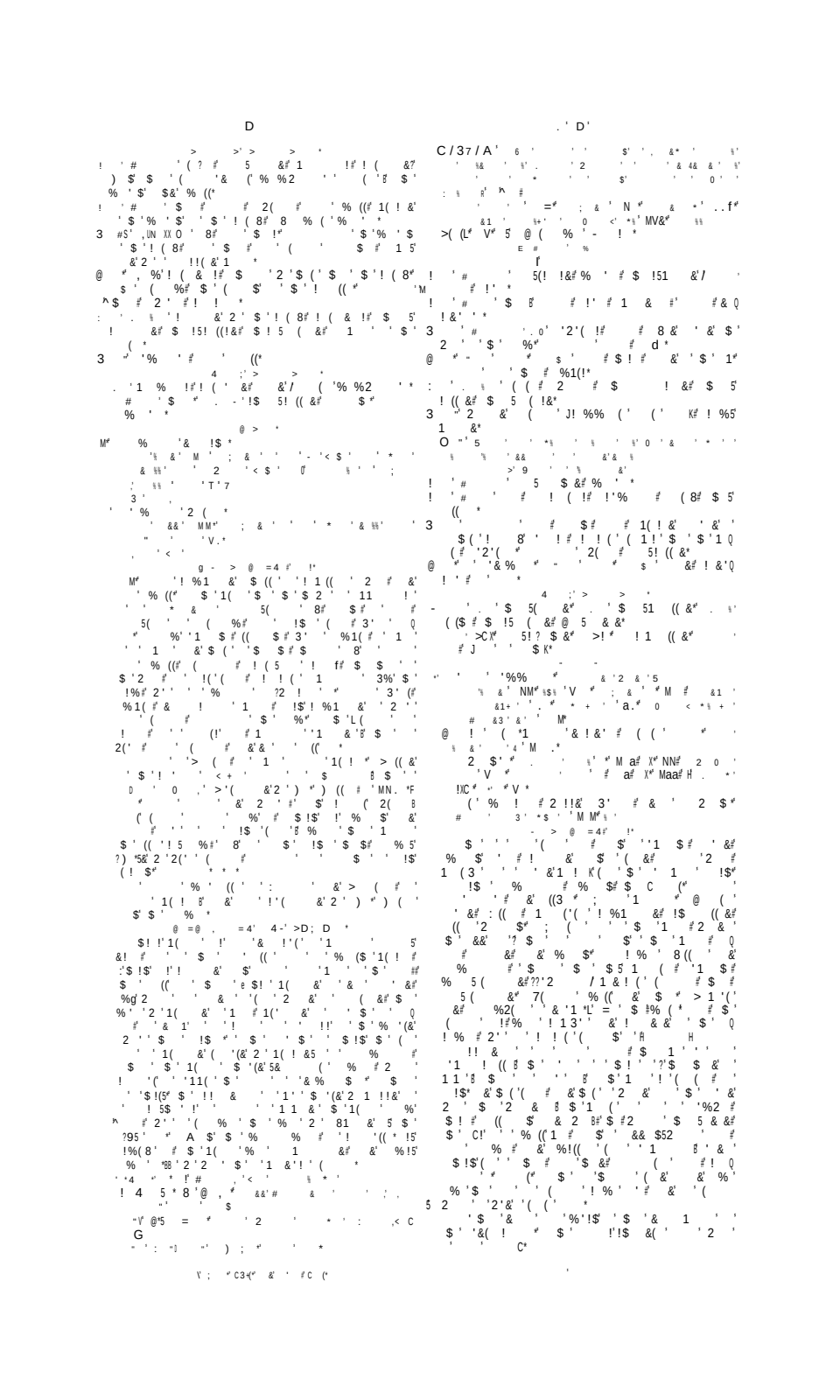












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2. Büttneria carthaginensis.
*Lin. syst.* 236. *Jacqu. amer. pict.* 41.—aculeata. *amer.* 76.
*Leaves ovate, rib and petioles prickly.*
3. Büttneria microphylla.
*Lin. syst.* 236. *Reich.* 551. *mant.* 209. *Jacqu. hort.* 10. *t.* 29.
*Branches flexuose even, leaves unarmed.*

DESCRIPTIONS, &c.

1. This is a perennial plant, shrubby at bottom, from three to five feet high, with alternate, long, angular branches, armed with short, reflex, cartilaginous prickles. Leaves linear-lanceolate, alternate, toothletted, pale green especially underneath, where the midrib has recurved prickles along it; the largest are four or five inches long and four or five lines in breadth; the lower ones are petioled, the upper subsessile; at the base are two deciduous stipules. At the axils of the leaves, stem and branches, the flowers are produced singly on short peduncles. Found by Aublet between Cayenne and Couron, in june [a].

2. Jacquin affirms this to be different from the foregoing. He describes it as a shrub with branches spreading on every side in the manner of the common Bramble. Stems perennial, rather woody, five-cornered; the furrows and angles obtuse, armed with crooked reflex prickles: the tender branches round, prickly, alternate. Leaves smooth, quite entire, or with one or two ferratures only, alternate, deciduous, the petiole and midrib prickly at the back: on the old branches ovate, acute, four inches long or more, on the younger lanceolate-acuminate, less. Racemes short, aggregate and axillary on the younger branches. Flowers without smell, small, white, very numerous. Native of Carthagena and St. Domingo: flowering september and october [b].

3. Spines of the stem solitary, by the side of the leaves, horizontal. Leaves alternate, or in pairs, remote, oval, very blunt, subsessile, spreading. Peduncles lateral, axillary, capillary, many, equal to the leaves. Calyx five-leaved, spreading. Petals linear, lobed on each side at the base. Fruit thorny all over [c].

It differs from the foregoing, in having unarmed leaves, the trunk and branches larger and round, the peduncles one-flowered, and the corolla purple and white variegated.

Found by Jacquin, in february 1757, near Port au Prince in the island of St. Domingo; and introduced by him into Europe [d].

BUTTON-TREE. See *Conocarpus*.
BUTTON-WEED. See *Spermacoce*.
BUTTON-WOOD. See *Cephalanthus*.

BUXBAUMIA.

A kind of Moss, of which there are only two species. 1. *B. aphylla*, figured in *Fl. dan. t.* 44. *Dill. muse. t.* 68. *f.* 5. and, 2. *B. foliosa*, figured by *Dillenius, t.* 32. *f.* 13. Both are to be found in the dissertation of the younger Linnæus on Mosses, p. 25 and 33. and the latter is figured there, t. 1. f. 4.

BUXUS. (πύξος; *from* πύκνα, *dense, spissa*: διὰ, το πυκνὸν τὸν ξύλον, *the timber being very dense and close.*)
Engl. *Box.* Fr. *Buis.*
*Lin. gen. n.* 1053. *Reich.* 1148. *Schreb.* 1420. *Tournef.* 345. *Juss.* 388. *Gærtn. t.* 108.
Class. 21. 4. Monoecia Tetrandria.
Nat. order of *Tricoccæ.—Euphorbiæ* Juss.

GENERIC CHARACTER.

* *Male flowers prominent from the buds of the plant.*
CAL. *Perianth* three-leaved: *leaflets* roundish, obtuse, concave, spreading.
COR. *Petals* two, roundish, concave, very like the calyx, but larger.
STAM. *Filaments* four, subulate, erect-expanding, rather larger than the calyx. *Anthers* erect, twin.
PIST. Rudiment of a germ without style or stigma.

* *Females in the same bud with the males.*
CAL. *Perianth* four-leaved: *leaflets* roundish, obtuse, concave, spreading.
COR. *Petals* three, roundish, concave, very like the calyx, but larger.
PIST. *Germ* superior, roundish, obtusely three-cornered, ending in three, very short, permanent *styles. Stigmas* obtuse, hispid.
PER. *Capsule* coriaceous, roundish, three-beaked, three-celled, bursting elastically into three parts.
SEEDS twin, oblong, rounded on one side, flat on the other.

ESSENTIAL CHARACTER.

MALE. *Cal.* three-leaved. *Petals* two. The rudiment of a germ.
FEM. *Cal.* four-leaved. *Petals* three. *Styles* three. *Caps.* three-beaked, three-celled. *Seeds* two.

SPECIES.

1. Buxus sempervirens.
*Lin. spec.* 1394. *Reich.* 4. 128. *hort. cliff.* 441. *upsal.* 283. *mat. med.* 200. *Gærtn. fruct.* 2. 125. *Hudson. angl.* 417. *With.* 1068. *Hall. helv. n.* 1610. *Scop. carn. n.* 1173. *Allion. pedem. n.* 2097. *Du Roi barbecc.* 1. 118. *Duham. arb.* 1. 115. *t.* 46. *Pallas. rosс.* 1. 17. *Villars dauph.* 2. 336. *Raii hist.* 1693. *Ger.* 1225. *emac.* 1410. *Park.* 1428. *f.* 1. 1429. *Camer. epit.* 601.
α. B. arborescens. *Bauh. pin.* 471. *Mill. dict. n.* 1. *Blackw. t.* 196. *Common Box-tree.*
β. B. angustifolia. *Raii syn.* 445. *Hudson.* β. *Mill. dict. n.* 2. *Narrow-leaved Box-tree.*
γ. B. suffruticosa. *Mill. dict. n.* 3. *Dwarf Box.*
B. fol. rotundioribus. *Bauh. pin.* 471.—humilis. *Dod. pempt.* 782.

DESCRIPTION, &c.

[Box is well known in its dwarf state, and as a shrub about three feet in height; it becomes however, when left to itself, a tree, twelve or fifteen feet high, with a trunk equalling the human thigh in thickness, covered with a rugged, grayish bark, that of the branches yellowish. The wood is of a yellow colour, of an even close grain, very hard and ponderous. It is the only one of the European woods which will sink in water. Theophrastus ranks it with the Ebony; for closeness of grain. The leaves are ovate or oval in the common sort, hard, smooth, glossy, evergreen, very dark green above, pale green underneath, something resembling those of Myrtle, but blunt and commonly emarginate at the end, the edges are revolute, they are set on very short petioles, and on the twigs they come out regularly in pairs, so close as almost to conceal them. On these, from the axils of the leaves, come out the small herbaceous flowers, in round bunches; a female flower occupying the middle of the bunch, and being surrounded by several males. The female flower is succeeded by a capsule of a globular form, very smooth, shining, tricoccous, and before it opens having three beaks, then resembling a tripod: the rind is three-valved, and the valves are two-horned: the *cocculi* or grains are of the consistence of paper, two-valved, and opening with an elastic spring: receptacle central, three-sided, and short: in each cell is a pair of seeds, ovate, growing more slender upwards, triangular-compressed, obliquely truncate at the end, blackish brown or black, smooth [e].

Mr. Miller insists that the Common Box-tree, the narrow-leaved, and the Dwarf or Dutch Box, are three certainly distinct species. The two sorts of Box Tree have been frequently raised from seeds, and constantly produced plants of the same kind from those the seeds were taken from; and the Dwarf Box will never rise to any considerable height with any culture, nor have I ever seen this sort flower, where the plants have been encouraged to grow many years in the greatest luxuriancy. There are two or three varieties of the first, which are propagated in the gardens, one with yellow, and another with white striped leaves. The other has the tops of the

[a] Aublet. [b] Jacquin. [c] Linn. [d] Jacquin. [e] Gærtner.

leaves only marked with yellow, which is called Tipped Box.

[The Box-tree is a native of moſt parts of Europe from Britain ſouthwards. I have ſeen whole mountains covered with it between Lyons and Geneva, in Savoy, *&c.* but none of any ſize. It is alſo very common in many parts of Burgundy, Dauphiné and Provence. It abounds in many countries of Aſia, as about mount Caucaſus, in Perſia, China, Cochinchina, *&c.* Alſo in America. In England it was formerly much more common than it is at preſent. Gerarde ſays, " it groweth upon ſundry waſte and barren hils in Englande :" and Parkinſon, " that it is found with us in many woods, and wood grounds; that it is alſo planted in divers orchards or houſe backſides, where it never groweth high, but ſerveth as a buſh to dry linnen on, *&c.*" Many of theſe buſhes however have grown up to trees of a reaſonable ſize, about old manſions, and farm-houſes, but are now for the moſt part deſtroyed.

" Theſe trees riſe naturally," ſays Evelyn, " in Kent, at Boxley, and in Surry, giving name to Box-hill. He that in winter ſhould behold ſome of our higheſt hills in Surry clad with whole woods of them, for divers miles in circuit; as in thoſe delicious groves of them belonging to the late Sir Adam Brown of Bechworth-caſtle, might eaſily fancy himſelf tranſported into ſome new or enchanted country."

The enchantment, alas! has been long broken.] Mr. Miller, in 1759, lamented, that the trees on *Box*-hill, had been then pretty much deſtroyed; though many remained of a conſiderable bigneſs. [The deſtruction ſince that time has been much greater.

It has been conjectured that Box-hill was planted with theſe trees by the Earl of Arundel: but there is the moſt authentic proof that they were there before his time, and the ground on which they grow was not his property[f].

Not only this hill near Darking in Surry, and Boxley in Kent, but Boxwel in Coteſwold, Glocеſterſhire, was named from this tree.

Mr. Woodward remarks it as plentiful on the chalk hills near Dunſtable. It is fond of open dry ſituations, and a calcareous ſoil. In temperate climates and ſeaſons it flowers in february and march.

The wood of the Box-tree ſells at a high price, by weight. Being very hard and ſmooth, and not apt to warp, it is well adapted to a variety of nicer works. " It is of ſpecial uſe," ſays Evelyn, " for the turner, engraver, carver, mathematical-inſtrument-maker, comb and pipe or flute-maker; the roots for the inlayer, and cabinet-maker. Of Box are made wheels and ſhivers, pins, pegs for muſical inſtruments, nut-crackers, button-moulds, weaver's ſhuttles, hollar-ſticks, bump-ſticks, and dreſſers for the ſhoemaker, rulers, rolling-pins, peſtles, mall-balls, beetles, tops, tables, chels-men, ſcrews, bobbins for bone-lace, ſpoons, knife-handles, nay the ſtouteſt axle-trees, but eſpecially combs:

" Non ultima belli
" Arma puellaris; laqueos hæc nectit amantum,
" Et venatricis diſponit retia formæ[g]."

The Engliſh wood is eſteemed inferior to that which comes from the Levant; and the American Box is ſaid to be preferable to ours.

The ancients made combs of Box, and muſical inſtruments to be played upon by the mouth. The Romans likewiſe clipped it into form, for which nothing is more fit, ſays Pliny; *ut quæ (arbor) ob denſæ ſubnaſcentes furculos & frondes, in animalium aliorumve effigies componi & detonderi præ alia quæcunque apta eſt.* And Martial obſerves of the garden at Baſſus's country-houſe:

" ——— otioſis ordinata myrtetis,
" Vidua quæ Platano, *tonſilique buxeto.*"

It was ſecond to the Yew with us in former times for the purpoſe of being clipped into the ſhape of animals, *&c.*: but the Dwarf Box ſtood unrivalled " for bordering up a knot, and was eſteemed a marvellous fine ornament to the flower-garden." The branches were in requeſt among our anceſtors for decking up houſes[h]; they are ſtill ſeen among other evergreens in churches at chriſtmas, and in ſome countries they are borne by attendants at funerals.

In our plantations, the Box ſtill keeps its place deſervedly among ornamental evergreens. It will flouriſh under the deepeſt ſhade, and will thrive in any ſoil and expoſure. Dr. Stokes affirms that it is fit to cut down in about thirty years.

Box has been much celebrated as a medicine in the venereal diſeaſe, colics, intermittent fevers, *&c.* Haller ſays, *vix credo ferio in uſum recipi.* Our Gerarde obſerves, " that it is more fit for dagger-hafts than to make medicines; though fooliſh empiricks and women leaches do miniſter it againſt the apoplexy and ſuch diſeaſes." He adds, " that turners and cutlers call this wood dudgeon, becauſe they make dudgeon-hafted daggers with it."

Parkinſon, in his firſt work ſays, " it has no phyſical uſe among the moſt and beſt phyſicians, although ſome have reported it to ſtay fluxes, and to be as good as Guaiacum for the French diſeaſe." Yet in his ſecond work he ſets it down " as a medicine for the bite of a mad dog! as a cure for the bots in horſes; and the leaves and ſaw-duſt boiled in lye, to change the hair to an Aborne (Auburn) or Abraham colour."

According to Dr. Withering, " an empyreumatic oil, diſtilled from the ſhavings, is often uſed as a topical application for the piles, and ſeldom fails to procure eaſe; it will frequently relieve the tooth-ach, and has been given internally in epilepſies; the leaves powdered deſtroy worms." Decoctions of the wood and bark are wholly diſuſed, on account of their being very nauſeous and diſagreeable to the ſtomach.

Pliny affirms that no animal will touch the ſeed of Box[i]. Gneſner relates that the branches are fatal to the camels that eat them[k]. None of our animals ſeem to touch this tree. Corſican honey was ſuppoſed by the ancients to owe its infamy to the bees feeding on the Box.

The name varies very little from the Greek and Latin in the European languages; being *Buck* or *Buckſbaum* in German; *Buxbom* in Sweditih and Daniſh; *Buis* or *Bouis* in French; *Buſſo* or *Boſſo* in Italian; *Box* in Spaniſh; *Buxbo* or *Buxo* in Portugueze. The Ruſſians have adopted *Samſchbit* from the Tartars. In Perſian it is *Schimſchat*; in Turkiſh *Ftchemtſchir.* In Japoneſe *Ko ſtuge.* In Chineſe *Huynh duong.* In Cochinchineſe *Hoam tuon.*]

PROPAGATION AND CULTURE.

All the varieties of Box may be propagated by cuttings planted in autumn in a ſhady border, obſerving to keep them watered until they have taken root, when they may be tranſplanted into the nurſery, until they are fit for the purpoſe intended. [Theſe cuttings may be planted ſo early as auguſt. but the beſt time is when the autumnal rains fall, They ſhould be a foot in length, and rather more than half ſhould be planted in the ground, at the diſtance of four inches from each other. A ſlip of the laſt year's wood, ſtripped from an older branch, is an excellent ſet, and there is little fear of its growing. The cuttings or ſlips may ſtand three years, and then be tranſplanted into the nurſery any time between auguſt and april, chooſing moiſt weather for the purpoſe, if this work be performed early or late. In the nurſery the rows may be two feet aſunder, and the plants a foot from each other in the rows[l].]

2. They may be propagated by laying down the branches. [This may be done between michaelmas and march; and it is the natural way by which Box frequently propagates itſelf; for when it breaks down

[f] Gentleman's Magazine, 57, 880. [g] Cowley. [h] Parkinſon parad. p. 606. [i] Hiſt. nat. l. 16. [k] Itin. 3. 108. [l] Hanbury.

by its own weight, or by a fall of ſnow, ſoon after it comes into contact with the ground, it ſends forth fibres.]

3. Box may be propagated by ſeeds ſown ſoon after they are ripe, in a ſhady border, and duly watered in dry weather. This is the beſt method to raiſe large trees. [The beſt ſoil for the ſeeds is a light loam or ſand, and they ſhould be ſown half an inch deep. They will come up in the ſpring, though probably many will lie in the ground to a ſecond ſeaſon. They ſhould ſtand two or three years in the ſeed-bed; and when they are ſtrong enough to plant out, they may be removed into the nurſery, and placed at the ſame diſtance as was preſcribed for the cuttings.]

The beſt ſeaſon for removing this tree is october, though it may be tranſplanted almoſt at any time, except in ſummer, if it be taken up with a good ball of earth.

Dwarf Box is increaſed by parting the roots or planting the ſlips; but as it makes ſo great an increaſe of itſelf, and ſo eaſily parts, it is hardly worth while to plant the ſlips that have no roots. It is ſo common that it may be purchaſed from the nurſeries at a cheap rate. The manner of planting it in edgings is well underſtood by every working gardener.

[BYSSUS.

A genus of the Cryptogamia Algæ, and the laſt in the ſcale of vegetation in that claſs. The ſpecies in Linneus are fourteen, but there are certainly many more of them. They appear in form of threads or a kind of meal on rotten wood, the bark of trees, rocks, damp banks, and walls, eſpecially of damp cellars. Hudſon and Withering enumerate nineteen Britiſh ſpecies: and Lightfoot fourteen.

One ſort is common on wine caſks, at firſt is like flakes of ſnow, but turns yellow, and at laſt like a mouſe's ſkin: in this ſtate it has black grains at the baſe like gunpowder, rots the caſks, and is excellent to ſtaunch blood. The green paper Byſſus is a farina concreting on the ſurface of the water, and forming a wide thin film on the ſurface. Weis denies it to be a vegetable [a]. Withering is of opinion that it is a *Conferva*.

BYSTROPŌGON. (*From* Βυω, *obturo, and* Πωγων, *barba; the colyx being cloſed by a ſort of beard.*)
*L'Herit. ſert. angl. t.* 22, 23.
Claſſ. 14. 1. Didynamia Gymnoſpermia.
Nat. order of *Verticillatæ*. *Labiatæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leaſed, divided into five awl-ſhaped ſegments, cloſed by a beard at the opening.
COR. monopetalous, ringent. Upper lip bifid, lower trifid, the outmoſt ſegment moſt produced.
STAM. *Filaments* four, didynamous, diſtant. *Anthers* incumbent.
PIST. *Germ* ſuperior, four-parted. *Style* ſubulate. *Stigma* bifid.
PER. none. *Calyx* cloſed with a beard, and cheriſhing the ſeeds.
SEEDS four.

ESSENTIAL CHARACTER.

*Cal.* five-ſubulate, bearded at the opening. *Cor.* upper lip bifid, lower trifid, *Stamens* diſtant.

SPECIES.

1. Byſtropogon pectinatum. *Balm-leaved B.*
*L'Herit. ſert.* 19. *n.* 1. *Hort. kew.* 2. 292.
Nepeta pectinata. *Lin. ſpec.* 799. *Reich.* 3. 34. *Swartz obſ.* 225. *Sloan. jam.* 1. 173. *t.* 108. *f.* 1?
Galeopſis. *Brown. jam.* 259. 2.
*Panicles compact, flowers directed one way, leaves ovate.*
2. Byſtropogon ſidæfolium. *Sida-leaved B.*
*L'Herit. ſert.* 19. *n.* 2.
*Panicles very looſe, peduncles in whorls, filiform, leaves cordate.*
3. Byſtropogon ſuaveolens. *Sweet-ſcented B.*
*L'Herit. ſert.* 19. *n.* 3.
Ballota ſuaveolens. *Lin. ſpec.* 815. *Reich.* 3. 63. *Swartz obſ.* 225. *Pluk. phyt. t.* 306. *f.* 3. *Plum. cat.* 6. *ic. t.* 155. *t.* 163. *f.* 1. (Meliſſa.) *Sloan. jam.* 1. 171. *t.* 102. *f.* 2. (Mentaſtrum.) *Brown. jam.* 257. *t.* 18. *f.* 3. (Meſopharum.) *Raii hiſt.* 1332. (Erva Cidreira).
*Peduncles axillary ſolitary, calyxes truncate awned, leaves cordate.*
4. Byſtropogon plumoſum. *Woolly-flowered B.*
*L'Herit. ſert.* 20. *n.* 4. *t.* 22. *Hort. kew.* 2. 292.
Mentha plumoſa. *Lin. ſuppl.* 273.
*Panicles dichotomous, calyxes feathered, leaves ovate ſubſerrate tomentoſe beneath.*
5. Byſtropogon origaniſolium. *Marjoram-leaved B.*
*L'Herit. ſert.* 20. *n.* 5.
*Panicles dichotomous, calyxes feathered, leaves ovate quite entire very white beneath.*
6. Byſtropogon canarienſe. *Canary B.*
*L'Herit. ſert.* 20. *n.* 6. *Hort. kew.* 2. 292.
Mentha canarienſis. *Lin. ſpec.* 807. *Reich.* 3. 46. *cliff.* 307. *Pluk. phyt. t.* 307. *f.* 2.]
Heliotropium canarienſe. *Mill. dict. n.* 5. *Comm. hort.* 2. 129. *t.* 65.
[*Peduncles dichotomous, flowers in heads, leaves ovate crenate very villoſe beneath.*
7. Byſtropogon punctatum. *Cluſter-flowered B.*
*L'Herit. ſert.* 20. *n.* 7. *t.* 23. *Hort. kew.* 2. 293.
*Panicles dichotomous, flowers in heads, leaves ovate toothed ſmooth finely dotted.*

DESCRIPTIONS, *&c.*

1. Stem ſuffrutеſcent or herbaceous, generally five or ſix feet high or more, but varying in height, four-cornered, even, brachiate, ſcarcely fragrant. Leaves petioled, cordate, veined, naked, ſerrate. Spikes ſimple or manifold, terminating, directed one way, interrupted, ſcarcely leafy; compoſed of peduncled, faſtigiate whorls, ſupported by ſeveral briſtle-ſhaped bractes, the length of the flowers; which grow very thick together, curiouſly diſpoſed on the ſmalleſt ſlips of the branched tops; they are whitiſh, and all the parts are very ſmall; the neck of the calyx and the filaments are commonly covered with down. The corolla is ſcarcely larger than the calyx; the border is five-cleft, four of the clefts being equal, ſharp, ſpreading, the fifth or lip purpliſh and roundiſh. Stamens the length of the corolla and diſtant. Style purpliſh. Stigmas ſimple. Seeds roundiſh, black, gloſſy. Spikes very odorous, like thoſe of White Horehound (Marrubium album)[b].

This plant is found in Sloane's herbarium, but the figure in his hiſtory does not correſpond with it[c].

Native of Jamaica, in all the low lands and dry ſavannahs about Kingſton and Spaniſh Town. It has alſo been found in Peru by Dombey. It flowers in december and january, and was introduced here in 1776, by Mr. Gilbert Alexander [d].

2. This alſo is a native of Peru, and was diſcovered there by Dombey [e].

3 Stem upright, becoming ſhrubby at bottom, branched, hirſute. Branches ſomewhat erect, and villoſe. Leaves oppoſite, roundiſh, ſometimes elliptic, crenate, nerved, villoſe: petioles long, ſlender, lax. Peduncles axillary, towards the ends of the branches, three or five-flowered. Flowers approximating, blue: calyx ten-ſtreaked, villoſe, viſcid; teeth awned, upright, villoſe: tube of the corolla narrower at the baſe, from the middle to the opening ſpreading out; upper lip compoſed of the two upper erect lateral ſegments and the helmet, which is ſmaller than the ſegments, ovate, arched, bent down, keeled above; lower lip compoſed of the two lower ſegments, which are alſo bent down. Filaments from the bottom of the tube, ſtanding up above the opening of the corolla, pubeſcent. Anthers blackiſh. Germ ovate: ſtyle ſhorter than the ſtamens: ſtigma ſimple, blunt. Seeds two, naked, ovate, black, ſlightly compreſſed. There are ſeldom four ſeeds. It is an annual plant, and

[a] Lightfoot.
[b] Linn. ſpec. Swartz, Browne. [c] L'Heritier. [d] Hort. kew. [e] L'Heritier.

the

the whole of it has a very ſtrong ſmell like that of its congeners[f].

The Portugueze call it *Erva Cidreira*, from its ſmelling ſomewhat like a Citron. In Jamaica, where it is common about Kingſton and Old-harbour, it is known by the name of *Spikenard*, on account of its ſtrong but pleaſant ſmell[g]. It is one of the moſt grateful cephalics and alexipharmics; and may be uſed in diſorders of the nerves and viſcera, where ſuch warm medicines are required[h].

It is a native of the continent of South America, as well as the iſlands of the Weſt Indies.

4. This and the next ſpecies, connect the two laſt with the foregoing ones[i].

It is a native of the Canary iſlands, where it was found by Maſſon. Introduced here in 1779, and flowers in june and july[k].

5. This is very nearly allied to the foregoing ſort, but the leaves are quite entire, and ſnow-white underneath. It was alſo found by Maſſon[l].

6. Stem woody, three or four feet high, dividing into many branches. Leaves on long peduncles hairy, and aſh-coloured on their under ſide. The flowers are produced from the ſide of the branches on pretty long peduncles, each ſuſtaining four roundiſh heads, dividing by pairs, and ſpreading from each other. They come out in june and july, but do not produce ripe ſeeds in England. The corolla is white. The leaves when bruiſed, emit an agreeable odour. The gardeners have given it the title of Madam Maintenon. It grows naturally in the Canary iſlands, and in the iſland of Madeira. In 1714 it was cultivated by the Dutcheſs of Beaufort; and flowers from june to auguſt[m].

7. The calycine ſegments are not ſubulate as in the other ſpecies; it is however of the ſame genus with them[n]. Native of Madeira, and introduced here in 1775, by Sir Joſeph Banks, Baronet: it flowers from july to ſeptember[o].

PROPAGATION AND CULTURE.

The three firſt ſorts muſt be preſerved in the bark-ſtove; the four laſt in the dry-ſtove or conſervatory. They may all be propagated by cuttings during the ſummer months.

BYTTNERIA. See *Buttneria*.

## C.

CAAPEBA. See *Ciſſampelos*.

CAAPOMONGA. See *Plumbago*.

CABBAGE. See *Braſſica*.

CABBAGE-TREE. See *Areca* and *Cacalia Kleinia*.]

CACALIA. (*Κακαλία, the name of an herb in Dioſcorides, and Pliny.*)

*Lin. gen. n.* 933. *Reich.* 1013. *Schreb.* 1269. *Gærtn. t.* 166. *Juſſ.* 178. *Vaill. act. gall.* 1719. *Tournef.* 458. *Raii meth.* 34. Kleinia, *edit. prior.* Cacalianthemum, *Dill. elth.* 54. 55. Porophyllum, *Vaill. act. gall.* 1719. *t.* 20. *f.* 39. Claſſ. 19. 1. Syngeneſia Polygamia Æqualis.

Nat. order of *Compoſitæ Diſcoideæ. Corymbiferæ* Juſſ.

GENERIC CHARACTER.

CAL. *Common* ſimple, oblong, at the baſe only ſubcalycled, cylindric; *ſcales* five to ten, equal, lanceolate-linear, forming a tube; a few very ſhort, incumbent on the baſe.

COR. *Compound* tubular: *Corollules* hermaphrodite, in number the ſame as the longer leaves of the calyx, uniform.—*Proper* funnel-form, gradually leſſening to the tube: *border* four or five-cleft, erect.

STAM. *Filaments* five, capillary, very ſhort. *Anthers* cylindric, tubular.

PIST. *Germ* oblong. *Style* filiform, the length of the ſtamens. *Stigmas* two, oblong, revolute.

PER. none. *Calyx* unchanged.

SEEDS ſolitary, oblong, ovate-narrow. *Down* capillary, very long.

REC. naked, flat, dotted.

OBS. Cac. alpina *differs in having the leaflets of the calyx glued together, and the corollules four-cleft.—With the addition of a ray, this genus would be changed into* Cineraria.

ESSENTIAL CHARACTER.

*Cal.* cylindric, oblong, at the baſe only ſubcalycled. *Down* capillary. *Recept.* naked.

SPECIES.

* *Shrubby.*

1. Cacalia papillaris. *Rough-ſtalked Cacalia.*
*Lin. ſpec.* 1168. *Reich.* 3. 707. Kleinia 3. *hort. cliff.* 395.

Cacalianthemum caudice papillari. *Dill. elth.* 63. *t.* 55. *f.* 63.

*Stem ſhrubby furniſhed with truncated petiolary ſpines.*

2. Cacalia Anteuphorbium. *Oval-leaved Cacalia.*
*Lin. ſpec.* 1168. *Reich.* 3. 707.

Kleinia. *Lin. hort. cliff.* 395. 4.

Anteuphorbium. *Bauh. pin.* 387. *Dod. pempt.* 378. *Mor. hiſt.* 3. 345. *n.* 5. *ſ.* 7. *t.* 37. *Dill. elth. t.* 55. *f.* 63. 2, 3. (flos).

*Stem ſhrubby, leaves ovate-oblong flat, petioles having a triple line at the baſe.*

3. Cacalia cuneifolia. *Wedge-leaved Cacalia.*
*Lin. ſyſt.* 733. *Reich.* 3. 708. *mant.* 110.

*Stem ſhrubby, leaves wedge-form ſtalky.*

4. Cacalia Kleinia. *Oleander-leaved Cacalia*, or *Cabbage-tree.*
*Lin. ſpec.* 1168. *Reich.* 3. 708. *Gærtn. fruct.* 2. 400.

Kleinia. *hort. cliff.* 395. 1.

Cacalianthemum fol. nerii glauco. *Dill. elth.* 61. *t.* 54. *f.* 62.

Arbor lavandulæ folio. *Cluſ. exot.* 1. 5. *p.* 6, 7. *Bauh. hiſt.* 1. 263. *f.* 1.

Frutex. ind. orient. lavend. fol. *Bauh. pin.* 401.

Linariæ ſim. Arbuſcula canarienſis, &c. *Pluk. phyt.* 2. 304. *f.* 3.

Tithymaloides fruteſcens nerii folio *Klein. monogr. Barm. ind.* 175.

*Stem ſhrubby compound, leaves lanceolate flat, ſcars of the petioles obſolete.*

5. Cacalia Ficoides. *Flat-leaved Cacalia.*
*Lin. ſpec.* 1168. *Reich.* 3. 708.

Kleinia. *hort. cliff.* 395. 2.

Senecio afr. arb., ficoides fol. & facie. *Comm. rar.* 1. 40. *Bradl. ſucc.* 5. 11. *t.* 49. *Dill. elth.* 61.

*Stem ſhrubby, leaves compreſſed, fleſhy.*

6. Cacalia repens. *Glaucous-leaved Cacalia.*
*Lin. ſyſt.* 733. *Reich.* 3. 708. *mant.* 110.

*Stem ſhrubby, leaves depreſſed fleſhy.*

7. Cacalia ſuffruticoſa. *Flax-leaved Cacalia.*
*Lin. ſyſt.* 733. *Reich.* 3. 709. *mant.* 109.

C. linifolia. *Ard. ſpec.* 2. 39. *t.* 19.

*Stem underſhrubby branching, leaves linear flat ſcattered.*

8. Cacalia laurifolia. *Bay-leaved Cacalia.*
*Lin. ſyſt.* 733. *ſuppl.* 351.

*Shrubby, ſmooth; leaves petioled, ovate, triple-nerved, obtuſe, quite entire, very ſmooth; thyrſe terminal; calyx four-leaved, ſmooth.*

9. Cacalia cordifolia. *Heart-leaved Cacalia.*
*Lin. ſyſt.* 733. *ſuppl.* 351.

*Shrubby, birſute; leaves petioled, cordate-ovate, nerved, acute, ſcabrous; calyx four-leaved, four-ſtreaked, pubeſcent.*

10. Cacalia aſclepiadea. *Aſclepias-like Cacalia.*
*Lin. ſyſt.* 733. *ſuppl.* 352.

*Shrubby, tomentoſe; leaves petioled, ovate-lanceolate, quite entire, very ſmooth above, tomentoſe beneath, the edges rolled back; panicles terminal.*

11. Cacalia appendiculata. *Ear-leaved Cacalia.*
*Lin. ſyſt.* 733. *ſuppl.* 352.

*Shrubby, tomentoſe; leaves cordate, ovate, acute, angular, tomentoſe beneath, petioles with leafy appendicles.*

12. Cacalia

[f] Swartz. [g] Sloane. [h] Browne. [i] L'Heritier. [k] Hort. kew. [l] L'Heritier. [m] Hort. kew. [n] L'Heritier. [o] Hort. kew.

12. Cacalia tomentosa. *Woolly-leaved Cacalia.*
*Lin. syst.* 733. *suppl.* 353.
*Shrubby, tomentose; leaves lanceolate, toothed, tomentose beneath, sessile.*

* *Herbaceous.*

13. Cacalia Porophyllum. *Perforated Cacalia.*
*Lin. spec.* 1169. *Reich.* 3. 709. *Swartz obs.* 298.
Porophyllum fol. ellipticis. *Lin. hort. cliff.* 494.
Senecio indicus, atriplices fol. glabro. *Mor. hist.* 3. 106. *s.* 7. *t.* 17. *f.* 7. *Raii suppl.* 184.
Chrysanthemum amer. frut., balsaminæ fol. &c. *Pluk. alm.* 100. *t.* 161. *f.* 1.
*Stem herbaceous undivided, leaves elliptic subcrenate.*]
14. Cacalia sonchifolia. *Sowthistle-leaved Cacalia.*
*Lin. spec.* 1169. *syst.* 733. *Reich.* 3. 709. *mant.* 463. *Murr. in comm. gott. nov.* 3. 79. *t.* 7. *Lour. cochinch.* 486.
Kleinia caule herb., fol. lyr. *Lin. fl. zeyl. n.* 305.
Muel Schavi. *Rheed. mal.* 10. 135. *t.* 68.
Senecio maderasp. sinapios fol., flor. parvis luteis. *Pluk. amalth.* 192. *t.* 444. *f.* 1.
Chondrilla zeyl. minor marina, fol. sin. *Burm. zeyl.* 61.
Sonchus amboinensis. *Rumph. amb.* 5. 297. *t.* 103. *f.* 1.
Tagolina luzonum, fl. purpureo. *Pet. gaz. t.* 80. *f.* 13. *Camell. luz.* 3. *n.* 8.
*Stem herbaceous, leaves lyrate stem-clasping toothed.*
[15. Cacalia incana. *Hoary Cacalia.*
*Lin. spec.* 1169. *Reich.* 3. 710.
*Stem herbaceous, leaves lanceolate toothed.*
16. Cacalia saracenica. *Creeping-rooted Cacalia.*
*Lin. spec.* 1169. *syst.* 734. *Reich.* 3. 710.
Solidago fol. lanc. decurr., caule angulato. *Monier. obs.* 168. *Sauv. monsp.* 84. *Gouan. monsp.* 444.
Senecio perennis, solidaginis fol. *Vail. act.* 366.
Virga aurea max., rad. repente, &c. *Mor. hist.* 3. 123. 1.
V. s. Solid. sar. latifolia serrata. *Baub. hist.* 2. 1063.
Conyza montana, &c. *Chom. act. par.* 1705. *p.* 394. fig.
*Stem herbaceous, leaves lanceolate serrate decurrent.*
17. Cacalia hastata. *Spear-leaved Cacalia.*
*Lin. spec.* 1170. *syst.* 734. *Reich.* 3. 710. *Gærtn. fruct.* 2. 400.
Senecio fol. ex dentato trilobis acumin. serr. *Gmel. sib.* 2. 136. *t.* 66.
*Stem herbaceous, leaves three-lobed acuminate, serrate, flowers nodding.*]
18. Cacalia suaveolens. *Sweet-scented Cacalia.*
*Lin. spec.* 1170. *syst.* 734. *Reich.* 3. 711. *hort. upsal.* 254. Kleinia.
*Stem herbaceous upright, leaves hastate-sagittate toothletted, petioles dilated at top.*
19. Cacalia atriplicifolia. *Orach-leaved Cacalia.*
*Lin. spec.* 1170. *Reich.* 3. 711. *Gron. virg.* 118. *Mor. hist.* 3. 94. *s.* 7. *t.* 15. *f.* 7.
Porophyllum fol. deltoid. angul. *Gron. virg.* 1. 94.
Nardus amer. procerior, fol. cæsiis. *Pluk. alm. t.* 101. *f.* 2. *Raii hist.* 3. 242.
*Stem herbaceous, leaves subcordate, tooth-sinuate, calyxes five-flowered.*
20. Cacalia alpina. *Alpine Cacalia.*
*Lin. spec.* 1170. *syst.* 734. *Reich.* 3. 711. *Gouan. hort. monsp.* 429. *Jacqu. austr.* 3. *t.* 234. *Hall. helv. n.* 137. *Allion. pedem. n.* 644. *Mill. dict. n.* 1.
α. C. fol. crassis hirsutis *Bauh. pin.* 197. *Mor. hist.* 3. 94. *s.* 7. *t.* 12. *f.* 1. *Moun. obs.* 147. *Hall. opusc.* 207. (Jacquin gives these synonyms to his C. tomentosa, which is C. albifrons. *Lin. suppl.* see *n.* 22.)
C. Alsiariæ. *Gouan. illust.* 65.
C. incano fol. *Clus. hist.* 2. 115. 1. *Raii hist.* 291. *Ger. emac.* 815. *n.* 1. *Park.* 1221. *f.* 1. *Hall. var. a.*
β. C. fol. cutaneis acutioribus & glabris. *Bauh. pin.* 198. *Mor. hist.* 3. 94. *s.* 7. *t.* 12. *f.* 6.
C. glabra. *Mill. dict. n.* 2. *Hall. d.*
Tussilago Cacalia. *Scop. carn.* 2. *n.* 1055.
C. glabro fol. *Clus. hist.* 2. 115. 2. *Lob. ic.* 592. *Raii hist.* 291. *n.* 2. *Ger. emac.* 815. *n.* 2.
*Leaves reniform-cordate acute toothletted.*
[21. Cacalia echinata.
*Lin. syst.* 734. *suppl.* 353.
*Herbaceous, leaves reniform cordate angular-toothed tomentose beneath, leaflets of the calyx tubercled.*
22. Cacalia albifrons. *White-leaved Cacalia.*
*Lin. syst.* 734. *suppl.* 353.
C. tomentosa. *Jacqu. austr.* 3. 20. *t.* 235.
*Herbaceous, leaves cordate biserrate acute tomentose beneath, stipulæ oblong rounded.*
23. Cacalia bipinnata. *Bipinnate-leaved Cacalia.*
*Lin. syst.* 734. *suppl.* 353.
C. pinnatifida.. *Berg. cap.* 230. *Lin. mant.* 281. *Reich.* 3. 712.
*Herbaceous, leaves bipinnate linear.*
24. Cacalia acaulis. *Stemless Cacalia.*
*Lin. syst.* 734. *suppl.* 353.
*Stemless; leaves semicolumnar; scapes one-flowered.*
25. Cacalia radicans. *Rooting Cacalia.*
*Lin. syst.* 734. *suppl.* 354.
*Herbaceous, creeping, rooting, leaves columnar-ovate fleshy.*
26. Cacalia articulata. *Jointed-stalked Cacalia.*
*Lin. syst.* 734. *suppl.* 354. *L'Herit. stirp. nov.* 175. *t.* 83.
C. laciniata. *Lin. syst.* 733. *Jacqu. ic. collect.* 1. 77.
*Fleshy; stem decumbent jointed; lower leaves hastate, upper lyrate.*]
27. Cacalia lutea. *Yellow Cacalia.*
*Mill. dict. n.* 10.
*Stem herbaceous, leaves five-parted acute glaucous beneath, flowers terminal on very long pedunceles.*
[28. Cacalia carnosa. *Narrow-leaved Cacalia.*
*Ait. hort. kew.* 3. 156.
*Stem shrubby; leaves roundish fleshy bent in, pedunceles terminating one-flowered naked.*
29. Cacalia scandens. *Climbing Cacalia.*
*Ait. hort. kew.* 3. 157.
*Stem herbaceous climbing, leaves sagittate toothed, petioles simple.*
30. Cacalia ruderalis.
*Swartz prodr.* 110.
Kleinia ruderalis. *Jacqu. amer.* 215. *t.* 127.
*Stem herbaceous branched, leaves lanceolate entire glaucous.*
31. Cacalia procumbens.
*Lour. cochinch.* 485.
Sonchus volubilis. *Rumph. amb. t.* 103. *f.* 2.
*Stem suffruticose, procumbent; leaves ovate-lanceolate, subserrate, fleshy; racemes elongated, interrupted.*
32. Cacalia bulbosa.
*Lour. cochinch.* 485.
*Leaves radical lyrate, stem almost naked, panicle few-flowered.*
33. Cacalia pinnatifida.
*Lour. cochinch.* 486.
*Leaves pinnatifid, segments lanceolate serrate; stem herbaceous twisted.*]

DESCRIPTIONS, *&c.*

1. This resembles the *Kleinia* (n. 4.) in its form and manner of growth, but the leaves are narrower and more succulent. These do not fall off entire, as in the other, but break off at the beginning of the foot-stalks, which are very strong and thick, and always continue; so that the main stalk of the plant, and the lower part of the branches, which are destitute of leaves, are set round on every side with three truncated foot-stalks: [and thus is the stem defended in a singular manner from external injuries[a].

This species was cultivated in the garden of James Sherard, M. D. at Eltham, about the year 1724. It was sent from Batavia, but probably came originally from the Cape of Good Hope, where it is known to be a native[b].] It has not yet produced any flowers in England.

2. This rises with many succulent stalks from the root, as large as a man's finger, branching out upwards

[a] Linn. cliff. [b] Dill. elth.

wards into many irregular ſtalks of the ſame form, but ſmaller. Leaves ſucculent, alternate, blunt; under each footſtalk are three ſmooth lines or ribs which run along the branch. It is generally known by the name of *Anteuphorbium*, being ſuppoſed to have qualities contrary to Euphorbium.

[It has been cultivated in European gardens ſince the year 1570, when it was growing in Boiſot's garden at Bruſſels[a]. It appears in Gerarde's catalogue, and therefore was cultivated here in 1596[b]. It very rarely flowers in Europe; in 1732 however it flowered in Mr. Blaithwait's garden at Dirham in Gloceſterſhire; and the flowers were ſent up by Powers his gardener to Dillenius, who has figured them[c]. This alſo is a native of the Cape of Good Hope.

3. Stem fleſhy, ſmaller than in the fifth, ſeventh, and eighth ſpecies. Leaves ſcattered, veinleſs, without any rib, flat above but ſomewhat convex underneath, and fleſhy. The leaves not being oppoſite, it cannot be a *Cotyledon*. Native of the Cape. Cultivated at Upſala, but it has not flowered there[d].]

4. This riſes with a thick fleſhy ſtem, divided at certain diſtances, as it were, into ſo many joints; each of theſe diviſions ſwells much larger in the middle. The ſtalks divide into many irregular branches of the ſame form; which, towards their extremities have long, narrow leaves, of a glaucous colour, ſtanding all round without order. As theſe fall off, they leave a ſcar at the place, which always remains on the branches. The flowers are produced in large cluſters, at the extremities; they are of a faint carnation colour. [The receptacle is narrow, ſmooth, and has obſolete fleſhy dots ſcattered over it. The ſeeds are almoſt cylindrical, ſmooth, and ruſeſcent: the down is longer than the calyx, of a ſilky whiteneſs, with capillary rays very minutely toothletted[e].]

It grows naturally in the Canary iſlands, and flowers in auguſt, ſeptember, and the greater part of octobet, but does not produce ſeed in this country. [It was cultivated in 1732, in the Eltham garden[f]; but was probably known earlier, ſince Mr. Miller ſays] that it has long been an inhabitant in the Engliſh gardens.

It is called Cabbage-tree by the gardeners, from the reſemblance which the ſtalks have to thoſe of Cabbage. Others have named it Carnation-tree, from the ſhape of the leaves, and colour of the flowers.

There have been *foſſils* dug up in ſome parts of England, which Dr. Woodward ſuppoſed to have impreſſions of this plant upon them.

[Cluſius is the firſt who mentions this plant. A figure and deſcription of it were ſent him from London by Garret, who received it from the Eaſt-Indies. Theſe are both imperfect: they are adopted however by John Bauhin; and his figure is better than Plukenet's[g].

Linneus, in his former works, made it a ſeparate genus, under the name of *Kleinia*, from *Jac. Theod. Klein*, who publiſhed a figure and deſcription of this plant, under the name of Tithymaloides, in the year 1730.]

5. This riſes with ſtrong round ſtalks to the height of ſeven or eight feet; they are woody at bottom, but ſoft and ſucculent upwards, ſending out many irregular branches. Theſe, for more than half their length, have thick, taper, ſucculent leaves, a little compreſſed on two ſides, ending in points, covered with a whitiſh meal; when broken, they emit a ſtrong odour of turpentine, and are full of a viſcid juice. At the extremities of the branches the flowers are produced in ſmall umbels; they are white, and cut into five parts at top: the ſtigma is of a dark purple colour, and ſtands erect above the tube. The ſeeds do not ripen in England. In France, the leaves are ſometimes pickled, with the white meal preſerved on them.

It grows naturally at the Cape of Good Hope: [and was cultivated in 1727, by Richard Bradley, Profeſſor of Botany at Cambridge. It flowers from june to november[h]. Mr. Miller ſays, that it was introduced from Holland about the year 1718[i].

6. The whole plant, in ſtature very much reſembles the fifth ſort; it is alſo covered with a glaucous meal; but the leaves have their upper ſurface concave, and are not compreſſed on the ſides. The root is creeping, whence the trivial name. It is a native of the Cape of Good Hope[k]: was cultivated by Mr. Miller in 1757; and flowers in june[l].

7. This is an undershrub, a palm in height, variouſly branched and filiform. Leaves quite entire, by no means fleſhy. Peduncles terminating, ſolitary, one-flowered, erect, the length of the ſtem. Calyx quite ſimple, five-leaved: leaflets ovate, obtuſe, erect, the ſides concealed and membranous. Floſcules many, purple. Down with hiſpid hairs. It has altogether the flower of the *Porophyllum* (n. 13.), but the herb is different[m]. Native of Braſil[n].

8. A very ſmooth ſhrub, reſembling the Lauruſtine (*Viburnum Tinus*). Leaves oppoſite, on ſhort petioles, the nerves running out beyond the baſe, green beneath, ſhining above, the conſiſtence of evergreens. Panicle terminal, like a thyrſe, comic. Calyx four-flowered; leaflets equal, oblong, obtuſe, two and two oppoſite. Border of the corolla larger than the tube, four-toothed. Piſtils very long. Found in Mexico, by Mutis[o].

9. Leaves oppoſite, on long petioles, broad-ovate, acuminate, ſerrate, hiſpid-ſcabrous, three-nerved and veiny. Petioles tomentoſe. Panicles terminal, cloathed with floral leaves. Calyxes very ſmooth (the diagnoſis ſays—*pubeſcent*), naked: leaflets equal, oppoſite, lanceolate, ſmooth, erect. Border of the corolla four-parted. Styles ſcarcely longer than the ſtamens. Down of the ſeeds entirely ſimple, longer than the calyx. It varies with entire and ſerrate leaves. Obſerved in South America, by Mutis[p].

Theſe two ſpecies agree ſo exactly in the flower; and are ſo remarkable in the fourfold diviſion of the calyx, and the number of the floſcules, that they might very well make a ſeparate genus, if I were not averſe from multiplying genera[q].

10. Stems round, hoary with a ſoft nap, ſtraight. Leaves oppoſite, ſpreading, ovate at the baſe and gradually drawn to a point, very tomentoſe beneath, but the upper ſurface quite ſmooth, veined, the conſiſtence of a bay leaf. Petioles roundiſh, tomentoſe. Panicles ſmall, heaped. Calyx calycled with larger ſcales, few-flowered. The herb has the appearance of an *Aſclepias*.

Found in South America, by Mutis[r].

11. Stem angular, tomentoſe, hoary. Leaves higher than the ſtem, on long petioles, not much emarginated at the petiole, nerved and veined, the upper ſurface very ſmooth and green, beneath white with nap. Immediately below the leaf, are very ſmall leaflets conſiſting of three pairs, oppoſite, petioled, ovate, quite entire, growing gradually leſs toward the leaf itſelf. Panicles terminal. Pedicels bracted. Flowers yellow. Found in watery places of the iſland of Teneriffe, by Francis Maſſon; who ſent another plant, found on the mountainous parts of the iſland, which he looked upon as a different ſpecies: but it differs from this, only in having the ſtem very ſmooth; and the leaves cordate-oblong, a little toothed and not angular[s].

12. Found at the Cape of Good Hope by Thunberg[t].

13. Stem from eight inches to a foot in height, round, ſlender. Leaves few, like thoſe of Atriplex or ſea Purſlane, on petioles half an inch in length. The top of the ſtem divides into peduncles, ſubdivided into pedicels, bearing ſmall flowers reſembling thoſe of *Erigeron*[u].

It is an annual plant, and a native of America.

[a] Dill. elth. 63. [b] Hort. kew. [c] Hort. elth. 64. [d] Linn. mant. [e] Gærtner. [f] Hort. kew. [g] Dill. elth.

[h] Hort. kew. [i] Dict. edit. 7. [k] Linn. mant. [l] Hort. kew. [m] Linn. mant. [n] Arduini. [o] Linn. ſuppl. [p] Ibid. [q] Ibid. [r] Ibid. [s] Ibid. [t] Ibid. [u] Moriſon.

Introduced

Introduced here in 1789, by Benjamin Bewicke, Eſq. and flowering from june to october [a].

This ſpecies, and *C. ruderalis* differ from the genus in their habit, and in having a ſubturbinate calyx; but there are not other generic marks ſeparating them from *Cacalia* [b].

14. Root annual. Stems almoſt ſimple, ſmoothiſh herbaceous, round, upright, reclining, near two feet high, branching a little towards the top. Lower leaves oblong, deeply lyrate, ſmooth, with the diviſions rather acute; the upper cordate-lanceolate, ſtem-claſping, a little toothletted at the baſe, with a few hairs eſpecially on the rib. Flowers few, the ſize of common Groundſel, in a terminating panicle, cylindric, with the proper peduncles briſtle-ſhaped. Calyx entirely ſimple. Florets purple, minute [b].

This ſpecies ſhows, that a calycled calyx is not a character common to the whole genus. The piſtil alſo is ſomewhat longer than the ſtamens. It is much uſed both in the medicine and œconomy of the Indians [c]: being eſteemed detergent, and the young leaves being eaten raw in ſalads [d].

It is a native of the Eaſt Indies, Ceylon, Amboina, China, Cochinchina, *&c.*] Mr. Miller ſays that he has alſo received the ſeeds from the Spaniſh Weſt Indies. It flowers in july, and the ſeeds ripen in ſeptember. [Mr. Miller cultivated it in 1768 [e].

15. Stature of *Verbeſina alata*. Stem erect, lofty. Leaves broad-lanceolate, ſcarcely petioled, thickiſh, ſerrate-toothed. Peduncles terminating, branched, long, naked, with one or two very ſmall leaflets. Native of the Eaſt-Indies [f].

16. This is a perennial plant very much reſembling *Senecio ſaracenica*. The bractes are briſtle-ſhaped [g]. Native of the South of France. Cultivated in 1772, by Mr. James Gordon, ſen. It flowers from auguſt to october [h].

17. Root perennial. Stem covered with a glaucous meal. Leaves haſtate-deltoid. Flowers compoſed of about five white florets; without the briſtle-ſhaped bractes, eſpecially at the ſubdiviſions. Anthers black. Peduncles hoary, tomentoſe [i]. Calyx cylindrical, many-leaved, with a ſingle or imperfectly double row of leaflets, calycled, with acuminate ſcales. Receptacle flattiſh, naked, with pentagon areas incloſing a depreſſed little nipple. Seeds almoſt cylindrical, ſtreaked, pale bay-coloured; crowned with a ſoft, white, capillary down, very minutely toothletted, a little longer than the ſeed [k].

Obſerved in Siberia, firſt by Gmelin, and afterwards by Pallas, who introduced it here in 1780 [l].]

18. This has a perennial creeping root, ſending out many ſtalks. Leaves long, ſmooth, veined, of a pale green on their under ſide, but a deep ſhining green above, placed alternately. The ſtalks riſe to the height of ſeven or eight feet, are ſtreaked, quite ſimple, and terminated by corymbs of white flowers. [The peduncles even above the ramifications, have briſtle-ſhaped bractes ſcattered over them, which are ſmooth, not hoary. It ſmells very ſweet when dry [m].]

Native of Virginia and Canada; flowering in auguſt, and ripening its ſeeds in october. The roots which have been caſt out of the Chelſea garden, have been carried by the tide to a great diſtance, have lodged on the banks of the river, and faſtened themſelves to the ground, where they have increaſed ſo much, that in a few years this plant may appear to be a native of this country. [Mr. Miller cultivated it in 1752 [n].]

19. Root perennial, compoſed of many fleſhy ſpreading tubers, ſending out ſeveral ſtrong ſtalks in the ſpring, four or five feet high. Leaves ſea-green on their under ſide, but darker above, placed alternately the length of the ſtalks, which are terminated by umbels of herbaceous-coloured flowers.

[It is of the ſame ſize and ſtature with the foregoing ſort. The lower leaves are cordate; the upper broader than long, and ſmooth. It differs from the *ſuaveolens* not only in the form and glaucous hue of the leaves; but alſo in having flowers five times ſmaller, with only five florets in each, whereas the foregoing ſorts have more [o].

Native of Virginia and Canada. Flowers here in auguſt. Cultivated in 1739, by Mr. Miller [p].

20. Root perennial. Stem a foot and half high and more, leafy and branching at intervals. Leaves on very long petioles; the loweſt either very long heart-ſhaped, or broader approaching to kidney-ſhaped, with the intervals of the toothings ſemilunar: ſome are wholly ſmooth; ſome have the nerves only hairy; others are wholly tomentoſe, and thicker. The ſtem branches at top, and on ſubdiviſions bears a broad and denſe corymb. Calyx of about five ſcales, conglutinated ſo as to appear one-leafed. Floſcules (three to five) quadrifid, purple. Seeds quadrangular, long, grooved [q].

Haller, beſides the two principal varieties, the ſmooth and tomentoſe, mentions that it is found with white florets, and with leaves deeply cut.

Mr. Miller makes two ſpecies of this: the firſt, or rough ſort he calls *alpina*; the ſecond, or ſmooth ſort, *glabra*.] The firſt, he ſays, has leaves ſhaped like thoſe of Ground-Ivy, but of a thicker texture, of a ſhining green on their upper ſide, but white on their under; among theſe ariſes the flower-ſtalk, which is round, branching towards the top, and grows a foot and half high; under each diviſion of the ſtalk is placed a ſingle leaf, of the ſame ſhape with thoſe below, but much ſmaller, the branches are terminated by a corymb of flowers, having about three purpliſh florets. The ſecond has the appearance of the other, but the leaves are almoſt heart-ſhaped, pointed, ſharply ſerrate, and on both ſides very green; the ſtalks riſe higher; the ſtem-leaves have much longer foot-ſtalks; and the flowers are of a deeper purple colour.

[Monſ. Villars has three ſpecies, beſides varieties. Firſt, *Cacalia glabra*, with ſmooth kidney-ſhaped, ſerrate leaves, the upper ones linear, the flowers in corymbs, with coloured calyxes, and about ſix florets in each. He thinks it is ſufficiently diſtinct from the others, in having a lower ſtem about a foot in height; the leaves thicker, a little fleſhy, ſmooth and more regularly toothed, cut off at the baſe by a tranſverſe ſection, inſtead of being bent back towards the origin of the petiole; and three to ſix coloured leaflets to the calyx, ſhorter by half than the florets. The leaves are ſometimes a little villoſe, but their figure is always the ſame, the number of florets does not vary, nor the form of their growth in a corymb.

Secondly, *Cacalia tomentoſa*, with kidney-ſhaped leaves very white on both ſides, the flowers in corymbs, with hirſute calyxes, and about twenty florets in each. This has the habit of the foregoing, but differs in having a thick down covering all its parts and rendering them tomentoſe or cottony; the upper leaves are lanceolate; and the calyxes contain from fifteen to twenty florets; the leaflets of the calyx terminate in a blackiſh point, like thoſe of common Groundſel (Senecio vulgaris). The third has this character, but not the firſt. The ſeeds are gloſſy, ſtreaked, crowned with a ſeſſile egret, which has the hairs feathered or a little toothed.

Thirdly, *Cacalia hirſuta*, with haſtate doubly-ſerrate hirſute kidney-ſhaped leaves, thoſe on the ſtem embracing with a dilated ſtipule, flowers in racemes, with from three to ſix florets in each. The ſtems are three feet high, often branched; the leaves very large, villoſe, often a ſoot wide, and their lateral ſegments approach to the petiole, they are revolute before they are entirely developed; in the raceme each peduncle has a linear bracte at its baſe, and the calyxes have an involucre of three linear open leaves [r]. This is deſcribed at length by Gouan [s], who ſuppoſes it to be quite diſtinct from the *alpina* of Linneus.

[a] Hort. kew. [b] Swartz. [c] Linn. mant. [d] Murray. [e] Loureiro. [f] Hort. kew. [g] Linn. ſpec. [h] Linn. ſpec. & ſyſt. [i] Hort. kew. [k] Linn. ſyſt. & ſpec. [l] Gærtner. [m] Hort. kew. [n] Linn. ſpec. [o] Hort. kew. [p] Hort. kew. [q] Haller. [r] Dauph. 3. 170—173. [s] Illuſtr. p. 65.

Allioni conſiders them all as one ſpecies; *ſmooth* in ſubalpine moiſtiſh ſituations, among buſhes, *hirſute* or very hairy in colder loftier rocky alpine ſituations, *tomentoſe* or cottony among ſtones in open ſituations, on the higher alps. He adds, that he has obſerved the tomentoſe variety to become hirſute, when cultivated in a garden [t].

Scopoli follows Adanſon [u], in making this plant a *Tuſſilago*. The genera are nearly allied; but Linneus inſiſts, that on inſpection he finds this to agree in the characters of the genus with the foregoing ſpecies; and that hence the *Cacaliat* ought to be united with the *Kleinias* [x].

Native of Switzerland, M. Jura, Dauphiné, Piedmont, Auſtria, Carniola. It was cultivated in 1739, by Mr. Miller [y].

21. This reſembles the *alpina* very much, but differs in having the calyxes tubercled, and the leaves tomentoſe beneath. It was obſerved by Maſſon in the iſland of Teneriffe, on precipices near the coaſt [z].

22. This is a ſingular plant, and very diſtinct from the others in having two leaves at the baſe of the petioles, reſembling ſtipules; they are ſeſſile, oblong, ſlightly toothletted, and tomentoſe beneath [a]. It ſeems to be the third ſort of Villars, deſcribed above under n. 20. the *C. Alliariæ* of Gouan, and the Petaſites, n. 141. of Haller.

Native of Auſtria, *&c.*

23. Stem upright, ſtreaked, even. Leaves ſomewhat crowded, toothed, even, about four inches long. Panicles terminating, ſubfaſtigiate; pedicels ſcaly; calyxes five-leaved, five-flowered, acute. Native of the Cape of Good Hope [b].

24, 25. Theſe were both found at the Cape, by Thunberg [c].

26. This is an elegant plant, ſmooth and glaucous, of an unpleaſant balſamic flavour. Stems many, fleſhy, round, upright but weak, marked with ſcars from the fallen leaves, and painted with lines of a deeper green; they are three feet high or more, and branching. Peduncles elongated, branching, round; the branches irregularly ſubcymoſe; the laſt peduncles ſcaly. Flowers fetid, nodding a little: calyx very ſmooth; leaflets from eleven to thirteen, ſharp; without any incumbent ſcales at the baſe. Florets twenty-five, a little longer than the calyx, white, with the border acute, and ſpreading much. Anther dark purple. Stigma bifid, yellow. Seeds linear, villoſe, crowned with a white, ſeſſile egret. The leaves are ſcattered and petioled, generally pinnate, the pinnules oblong, tooth-gaſhed or entire, the end-one largeſt [d]. According to L'Heritier, they are pinnatifid, or haſtate, but more frequently ternate-pinnatifid; the ſegments lanceolate, ſpreading very much, the two loweſt diſtinct; the ſinuſes rounded. There is a ſharp, ſhort linear bracte at the baſe of each pedicel, and ſome others at the baſe of the calyx, which is compoſed of about ten leaflets.

Found at the Cape of Good Hope, by Maſſon, and introduced in 1775. It flowers in november [e].

27. This grows naturally at St. Helena, from whence I received the plants: the roots ſpread and increaſe under the ſurface, the leaves ariſe immediately from the root, have very ſhort foot-ſtalks; they are cut into five or ſix long acute ſegments almoſt to the midrib, the ſegments are alſo acutely cut on their ſides in two or three places: the under ſide of the leaves are glaucous, their upper ſide of a dark green. The flower-ſtalk ariſes between the leaves immediately from the roots; this is naked, about eight inches high, terminated by ſix or eight yellow compound flowers ſtanding on long foot-ſtalks, almoſt in an umbel; the flowers are ſucceeded by oblong ſeeds, which rarely ripen in England.

[28. Native of the Cape of Good Hope. Cultivated in 1757, by Mr. Miller. It flowers in june [f].

29. This alſo is a native of the Cape, where it was found by Maſſon. It was introduced in 1774; and flowers in april [g].

Mons. L'Heritier has given this name to the *Eupatorium ſcandens* of Linneus, which he has removed to this genus [h].

30. This is an annual plant, upright, not more than three feet high, very ſmooth, panicled. Leaves very various in ſize, moſtly alternate, either entire or unequally repand or gaſhed, acute, petioled. Peduncles one-flowered, terminating, ſolitary, upright. Flowers void of ſcent, with a green calyx, and a corolla green and yellow mixed. Native of St. Domingo and Martinico [i].

31. Stems perennial, nine feet high, procumbent, round, equal, ſmooth, ſucculent, branched. Leaves bright green, ſmooth, alternate, petioled. Calyx cylindric, even, calycled. Corollules gold-coloured, few, long, with the ſegments of the border erect. There is a variety, with the ſtems and under ſurface of the leaves purple. Native of China and Cochinchina: where it is uſed as a pot-herb.

32. Root a roundiſh, knotted, perennial bulb. Root-leaves oblong, toothletted, ſomewhat fleſhy, petioled, few. Stem a foot and half high, upright, round. Flowers gold-coloured on a terminating peduncle ſeveral together. Calyx cylindric; calycle five-leaved, the leaflets filiform, looſe. Tube of the corollules longer than the calyx, inflated, reflex, with a ſhort, converging border. Stigmas two, long, erect. Native of China and Cochinchina.

It is emollient, refrigerant and reſolvent; uſed chiefly externally in reſolving tumours, and in the Eryſipelas, as a cataplaſm; the juice of the leaves in inflammations of the eyes; as a gargariſm in inflammations of the fauces.

33. Stem two feet high, upright, thick. Leaves pinnate-gaſhed, the ſegments ſmooth, and not fleſhy. Flowers yellow, in a terminating panicle, few together. Calyx oblong, round, calycled.

This is different from C. pinnatifida Lin. mant. which is our bipinnata, n. 23.

Native of China near Canton, among rice. [k]]

PROPAGATION AND CULTURE.

All the ſorts which are natives of the Cape of Good Hope may be propagated by cuttings during the ſummer months: theſe ſhould be cut from the plants and laid to dry a fortnight, that the wound may be healed over before they are planted. Moſt people plunge the pots, in which theſe are planted, into a moderate hot-bed, to forward their putting out roots; but if they are planted in june or july, they will root as well in the open air. I have frequently had the branches broken off by accident, and fallen on the ground, which have put out roots without any care. Theſe branches may be kept ſix months out of the ground, and will take root if planted. They ſhould have a light ſandy earth, and in winter be placed in an airy glaſs-caſe, where they may enjoy the ſun and air in mild weather, but muſt be protected from froſt. During the winter ſeaſon, the plants muſt have but little water; and in ſummer, when they are placed in the open air, it ſhould not be given them too often, nor in great quantity, but they muſt be treated like the Ficoides, and other ſucculent plants from the ſame country.

1, 2. The firſt and ſecond ſorts require a ſandy, poor ſoil, and to be kept very dry both ſummer and winter: hard rains often cauſe them to rot; but they require the open air in ſummer.

4. The ſouth muſt have a dry warm glaſs-caſe in winter, and very little water. In ſummer it muſt be placed in the open air in a warm ſheltered ſituation. With this management the plants will flower annually, and grow to the height of eight or ten feet.

14. The fourteenth ſort is propagated by ſeeds, which if ſown in the autumn, ſoon after they are

[t] Fl. pedem. 1. p. 178. [u] Familles des plantes, p. 122.
[x] Linn. ſpec. [y] Hort. kew. [z] Linn. ſuppl. [a] Ibid.
[b] Ibid. [c] Ibid. [d] Jacquin. [e] Hort. kew. [f] Ibid.
[g] Hort. kew. [h] Stirp. nov. p. 196. [i] Jacquin.
[k] Loureiro.



ripe,

ripe, into a pot, and plunged in the tan-bed in a ſtove, will more certainly ſucceed than thoſe ſown in the ſpring: but where there is not ſuch a conveniency, the ſeeds ſhould be ſown on a hot-bed in the ſpring, and when the plants are fit to remove, they ſhould be planted on another hot-bed to bring them forward, ſhading them till they have taken new root, after which air ſhould be daily admitted to them in proportion to the warmth of the ſeaſon. When the plants have acquired ſtrength, they ſhould be planted in pots, and either plunged into a moderate hot-bed under a deep frame, or placed in a glaſs-caſe, where they will flower and perfect their ſeeds.

18, 19. Theſe multiply greatly by their ſpreading roots, and alſo by the ſeeds, which are wafted to a great diſtance by the wind. The roots ſhould be tranſplanted in autumn; and they require a moiſt ſoil, with an open ſituation.

20. Is propagated by parting the roots, for it ſeldom produces good ſeeds in England. The beſt time to do this is in autumn. It requires a loamy ſoil, and a ſhady ſituation.

28. Increaſes faſt by its roots, which may be parted either the beginning of ſeptember, or the end of march, and ſhould be planted in pots filled with light earth, and plunged into the tan-bed in the ſtove, where it ſhould be conſtantly kept, being too tender to thrive elſewhere in this climate.

CACALIA. See *Eupatorium* and *Tuſſilago*.

[CACALIANTHEMUM. See *Cacalia*.

CACAO. See *Theobroma*.

——— AFFINIS. See *Randia*.

CACARA. See *Dolichos*.]

CACHRYS. (Καχρυς, *hordeum toſtum, roaſted* or *parched barley. The ſeed reſembles a grain of barley. Tournef.*)
*Lin. gen. n.* 342. *Reich.* 372. *Schreb.* 474. *Gærtn. t.* 140. *Juſſ.* 223. *Tournef.* 172. *Rait meth.* 48.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Umbellatæ*, or *Umbelliferæ*.

GENERIC CHARACTER.

CAL. *Umbel univerſal* manifold: *partial* ſimilar.
*Involucre univerſal* many-leaved, linear-lanceolate: *partial* ſimilar.
*Perianth* proper ſcarcely obſervable.

COR. *univerſal* uniform: *floſcules* all uniform.
*Proper* of five, lanceolate, almoſt upright, equal, flattiſh petals.

STAM. *Filaments* five, ſimple, the length of the corolla. *Anthers* ſimple.

PIST. *Germ* turbinate, inferior. *Styles* two, ſimple, the length of the corolla. *Stigmas* headed.

PER. *Fruit* ſubovate, angular, obtuſe, very large, ſuberous-cortical, ſplitting in two.

SEEDS two, very large, very convex on one ſide, flat on the other; ſungous, with ſolitary ovate-oblong nucleuſes.

ESSENTIAL CHARACTER.

*Fruit* ſubovate, angular, ſuberous-cortical.

SPECIES.

1. Cachrys Libanotis. *Smooth-ſeeded Cachrys.*
*Lin. ſpec.* 355. *Reich.* 681. *hort. cliff.* 94. 1. *Mor. hiſt.* 3. 267. *ſ.* 9. *t.* 1. *f.* 6. *umb. t.* 3. *f.* 3. *Mill. dict. n.* 3.
Libanotis ſcrulæ fol., ſem. anguloſo. *Bauh. pin.* 158. *Bauh. hiſt.* 3. 40. *Rai hiſt.* 424. *n.* 2. *Ger.* 858. *f.* 3. *emac.* 1010. *f.* 4. *Park.* 882. *f.* 1.
*a.* C. ſemine fungoſo lævi, foliis ſerulaceis. *Tourn. inſt.* 325.
C. triſida. *Mill. dict. n.* 1.
*Leaves ſuperdecompound, leaflets ſpreading acuminate, ſeeds ovate furrowed unarmed.*

2. Cachrys ſicula. *Hairy-ſeeded Cachrys.*
*Lin. ſpec.* 355. *Reich.* 1. 681. *Mor. hiſt. f.* 3. and *umb. t.* 3. *f.* 2. *Linn. hort. cliff.* 1. 8, 9.
Hippomarathrum creticum. *Bauh. pin.* 147. *prodr.* 76.
H. ſiculum. *Bocc. ſic.* 36. *t.* 18. *Rai hiſt.* 424. *n.* 3.
*a.* C. linearis. *Mill. dict. n.* 4.
*Leaves ſuperdecompound with filiform leaflets, ſeeds roundiſh-ovate grooved, wrinkled.*

[3. Cachrys tenuifolia. *Fine-leaved Cachrys.*
*Gouan. illuſtr.* 12.
*Leaves ſuperdecompound ſmooth with very numerous filiform leaflets, ſeeds oval.*

4. Cachrys odontalgica.
*Lin. ſyſt.* 280. *ſuppl.* 181. *Gærtn. fruct.* 2. 274. *Pallaſ. it.* 3. 720. *t.* G. *f.* 1, 2, 3.
*Leaves ſuperdecompound rough with hairs; the end-leaflets digitate-multifid blunt iſh, ſeeds obovate truncate even.*

5. Cachrys panacifolia.
*Vahl. ſymb.* 1. 25.
C. hungarica. *Mill. dict. n.* 5. *Linn. hort. cliff.* 94. *n.* 2? — panacis folio. *Tournef. inſt.* 325. *Bocc. ſic.* 1. *t.* 1. (Panax).
*Leaves pinnate and ternate with oblong crenate leaflets, ſeeds hirſute.*]

DESCRIPTIONS, &c.

1. The firſt ſort has a thick fleſhy root like Fennel, which runs deep into the ground, ſending out ſeveral narrow pinnate leaves, ending in many points; between theſe ariſes a ſmooth jointed ſtalk about three feet high, which is terminated by large umbels of yellow flowers.

[*a.* There is no material difference in Miller's deſcriptions of his firſt and third ſpecies.

Native of Sicily. Cultivated by Gerarde, in 1597*.

2. Upper leaves oppoſite. The terminating univerſal umbel ſeſſile, with the univerſal and partial involucres branching. The other umbels pedunculed, with both involucres ſimple. Seeds very thick, grooved, hiſpid*.

Native of Spain and Sicily.

Mr. Miller makes two ſpecies of this.] He deſcribes them as having very thick ſweet-ſmelling roots, which ſtrike deep into the ground, ſending out ſeveral very narrow pinnate leaves, like thoſe of Hog-Fennel, but ſhorter. The ſtalks are ſmooth and jointed like thoſe of Fennel; terminated by large umbels of yellow flowers, like thoſe of Dill. The ſtalk of the *ſicula* riſes four or five feet high; and of his *linearis* five or ſix feet.

[3. The *Cachrys Libanotis* of Gouan ſeems to be a different ſpecies from that of Linnæus. It is thus deſcribed in the illuſtrations of that author.

Root perennial, brachiate, fleſhy, gratefully aromatic, with branches an inch thick, a cubit in length, covered with a ſmooth bark. Stem branched from the bottom, ſpherical-panicled, greenith, ſhining, and very ſlightly ſtreaked. Leaves ferulaceous, triangular, the pinnas, pinnules, and leaflets oppoſite; the latter filiform, equal, ſcarcely three lines in length. Petioles at each inſertion thicker, ſlightly ſtreaked. Sheaths nerved, ſtreaked. Upper leaves only four-fold pinnate. Branches at the top of the ſtalk often three or four in a ſort of whorl. Umbels almoſt a ſpan in diameter, conſiſting of from ſixteen to twenty rays, which are nearly equal, and two inches in length. Univerſal involucre variable; in the principal umbels it conſiſts of equal capillary-multifid leaflets, as in *Daucus*, *Ammi*, &c.; whereas thoſe which terminate the ſubdiviſions of the branches are either naked, or have a very ſmall undivided involucre like the involucels. From the centre of the receptacle ſometimes but ſeldom iſſues a ſingle peduncle, fleſhy at the top and flat. All the umbellules are ſmall, and conſiſt of from fourteen to ſixteen unequal rays, a third or half an inch in length. All the involucels conſiſt of filiform unequal ſimple leaflets. Flowers yellow.

Native of the country about Montpellier; flowering in may.

4. Root-leaves ternate; the extreme leaflets very elegantly incurved upwards. Stem ſingle, ſtreaked, from nine to twenty-one inches in height, panicled at top with umbelled branches diſpoſed in a ſort of thyrſe. There are ſtipuliform leaves at the origin of the lower branches, and on the middle of the umbelliferous ones. The involucres conſiſt of a few

* Hort. kew. * Linn. ſpec.

narrow deciduous leaves. Rays of the umbel from four to six. Umbellules more copious and crowded, with ten or more flowers, of a deep yellow, appearing the beginning of may. Fruit very large[a], ovate-cylindric, white, smooth: seeds ovate-oblong, plano-convex. The position of the cotyledons very unusual; they being collateral, almoſt as in *Meniſpermum*, except that they are both in one cell of the albumen[b].

The root is very long, and being of a very ſharp aromatic flavour, it is uſed in the tooth-ach. Found abundantly between the Volga and Jaick[c].

3. Stem three feet high, ſtreaked, hoary, round, full. Root-leaves pinnate, in fives; ſtem-leaves ternate: leaflets ſeſſile, the three outmoſt almoſt confluent, villoſe on the veins, rugged, paler underneath, the lateral ones oblique at the baſe on one ſide, the end one larger than the others. Petioles ſtreaked, as is alſo the midrib. Umbels concave, thirteen-rayed. Involucres ſeven or eight-leaved; leaflets linear-ſubulate, reflex, villoſe, many times ſhorter than the rays. Involucels more copious in leaflets, in other reſpects like the involucres. Petals minute, white. Seeds oblong, hirſute, hoary, a little ſuberous. Styles reflex, permanent, ſhorter than the ſeeds.

Native of New Caſtille and Barbary[f]. ]

PROPAGATION AND CULTURE.

Theſe plants are all propagated by ſeeds, which ſhould be ſown ſoon after they are ripe; for if they are kept out of the ground till the following ſpring, they often miſcarry, and when they ſucceed, they never come up until the ſpring after; ſo that by ſowing them in autumn, a whole year is ſaved, and the ſeeds ſeldom miſcarry. Theſe ſeeds ſhould be ſown on a ſhady border, where the plants are to remain; for the plants having long tap roots, will not bear tranſplanting ſo well as many other kinds. The diſtance three feet apart; ſo that if each kind is ſown in a drill, when the plants are come up, they may be thinned, leaving two of the moſt promiſing plants of each kind to remain. Theſe plants will begin to appear early in april, when they muſt be carefully cleared from weeds; and in dry weather, if they are gently watered while young, it will greatly promote their growth; after which time they will require no farther care but to keep them clean from weeds, and every ſpring to dig the ground carefully between them, to as not to injure the roots.

Theſe plants decay to the ground every autumn, and come up again in the ſpring: they commonly flower in the beginning of june, and their ſeeds are ripe in ſeptember. Their roots ſometimes run down three or four feet deep in the earth provided the ſoil be light, and are often as large as Parſneps. They will continue many years, and if the ſoil be moiſt and rich, they will annually produce good ſeeds; but when they grow on a dry ſoil, the flowers commonly fall away without ſeeds.

CACHRYS. See *Laſerpitium*.

CACTUS. (Κάκτος, *the name of a prickly plant in Theophraſtus, Pliny, &c. Athenæus ſays it is the ſame plant which the Romans call Cardunculus, the Greeks* Κυναρα; *the Artichoke.*)

*Lin. gen.* 613. *Reich.* 668. *Schreb.* 838. *Gærtn.* 1. 138. *Juſſ.* 311. Melocactus. *Tournef.* 425. Cereus. *Juſſ. act. gall.* 1716. *Mill. dict.* Opuntia. *Tournef.* 123. *Mill. dict.* Tuna. *Dill. elth.* 295—299. Pereſkia. *Plum. t.* 26. *Mill. dict.* Rhipſalis. *Gærtn.* 1. 28.

Claſſ. 12. 1. Icoſandria Monogynia.

Nat. order of *Succulentæ. Juſſ.* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, imbricate, hollow-tubular, with ſcaly leaflets ſcattered over it, ſuperior, deciduous.

COR. *Petals* numerous, rather obtuſe, broad: the *outer* ones ſhorter; the *inner* larger, converging.

STAM. *Filaments* numerous, ſubulate, inſerted into the calyx. *Anthers* oblong, erect.

PIST. *Germ* inferior. *Style* the length of the ſtamens, cylindric. *Stigma* headed, multifid.

PER. *Berry* rather oblong, one-celled, unibilicate, roughened as the calyx is.

SEEDS numerous, roundiſh, ſmall, neſtling.

OBS. Cereus J. *is a long, ſtraight, angular plant.*

Melocactus T. *roundiſh, angular.*

Opuntia T. *branching, diclinomous.*

Pereſkia P. *arboreous, leafy; with a leafy fruit.*

*The* Melocacti *are monocotyledonous, the* Opuntiæ *dicotyledonous, and yet they are of the ſame natural genus.*

ESSENTIAL CHARACTER.

*Cal.* one-leafed, ſuperior, imbricate. *Cor.* manifold. *Berry* one-celled, many-ſeeded.

SPECIES.

* *Echinomelocacti, of a roundiſh form.*

1. Cactus mammillaris. *Smaller Melon-Thiſtle. Lin. ſpec.* 666. *Reich.* 2. 465. *hort. cliff.* 181. 1. *upſ.* 119. 1.

Echinomelocactus. *Herm. par. t.* 136.—lanuginoſus tuberculis ſpinoſis undique obſitus, fructu e lateribus ſparſim egrediente. *Raii hiſt.* 1917. *dendr.* 25. 4. 5.

Ficoides ſ. Melocactus mamm. glabra, &c. *Pluk. alm.* 148. *t.* 29. *f.* 1.

F. ſ. Ficus americana ſphærica tuberculata lacteſcens, fl. albo. *Comm. hort.* 1. 105. *t.* 55. *Bradl. ſucc.* 3. 11. *t.* 29. *Raii dend.* 24. *n.* 1.

*a. Simple, with red ſpines.*

C. mamillaris. *Mill. dict.*

*β. Manifold, with white ſpines.*

C. prolifer. *Mill. dict. n.* 6. *Chilling Melon-Thiſtle.*

*Roundiſh, covered with ovate beaded tubercles.*

2. Cactus Melocactus. *Great Melon-Thiſtle*, or *Turk's-cap. Lin. ſpec.* 666. *ſyſt.* 459. *Reich.* 2. 465. *hort. cliff.* 181. 2. *upſ.* 119. 2. *Mill. dict. n.* 1. *Szeartz obſ.* 198.

C. humilis ſubr. ſulcatus & coronatus, ſpinis confertis. *Browne. jam.* 238. 10.

Melocactus indim occidentalis. *Bauh. pin.* 384.

Echino-Melocactus. *Cluſ. exot. t.* 92. *Bradl. ſucc.* 4. 9. *t.* 32. *Sloan. jam.* 2. 159.

Melocarduus echinatus. *Ger.* 1013. *emac.* 1177. *Raii hiſt.* 1467.—americanus. *Park.* 1627.

*a.* C. Melocactus. *Mill. dict. n.* 1. *Common Melon-Thiſtle.*

*β.* C. albiſpinus. *Mill. dict. n.* 4. *edit.* 7. *Fourteen-angled, with long recurved white ſpines.*

*γ.* C. recurvus. *Mill. dict. n.* 3. *Lin. mant.* 243. C. nobilis. *Reich.* 2. 466.

*Fifteen-angled, with broad recurved ſpines ſet very cloſe.*

*δ.* C. intortus. *Mill. dict. n.* 2.

Melocactus purpureis ſtriis in ſpiram intortis. *Plum. cat.*

*Fifteen-angled, angles ſpirally twiſted, ſpines erect. Roundiſh, fourteen (or fifteen) angled.*

** Cereuſes, *erect, ſupporting themſelves.*

3. Cactus Pitajaya. *Lin. ſyſt.* 459. *Reich.* 2. 466. *Jacqu. amer.* 151. *edit.* 2. 75. *Park.* 1628.

Cereus triangularis. *Mill. dict. n.* 9.

*Erect, triangular.*

4. Cactus heptagonus. *Seven-angled upright Torch-Thiſtle. Lin. ſpec.* 666. *Reich.* 2. 466. *hort. cliff.* 181. 3.

Cereus heptagonus. *Mill. dict. n.* 6? See n. 8.

*Erect oblong ſeven-angled.*

5. Cactus tetragonus. *Four-angled upright Torch-Thiſtle. Lin. ſpec.* 667. *Reich.* 2. 466. *hort. cliff.* 181. 4. *upſ.* 119. 3.

Cereus tetragonus. *Mill. dict. n.* 2.

Cer. erect. minor, fructu ſpinoſo coſtarum numero varians. *Herm. par.* 117. *Boerh. n.* 9. *Raii dendr.* 23. *n.* 7.

*Erect, quadrangular, long; angles compreſſed.*

6. Cactus

[a] Palla. [b] Gærtner. [c] Pallas. [f] Vahl.

6. Cactus hexagonus. *Six-angled upright Torch-Thistle.* *Lin. spec.* 667. *Reich.* 2. 466. *hort. cliff.* 181. 5. *upsf.* 119. 4.
Cereus hexagonus. *Mill. dict. n.* 1.
Cer. erectus, &c. *Herm. par.* 116. *Raii dendr.* 23. *n.* 6. *Bradl. succ.* 1. *t.* 1. *Boerh. lugdb.* 1. 292. *n.* 1, 2.
Melocactus monoclonos, fl. albo, fructu atropurpureo. *Plum. spec.* 19. *ic.* 191?
*Erect fix-angled long; angles distant.*

[7. Cactus pentagonus. *Five-angled upright Torch-Thistle.*
*Lin. spec.* 667. *Reich.* 2. 467. *hort. cliff.* 182. 9.
*Erect, long, jointed; with about five angles.*]

8. Cactus repandus. *Slender upright Torch-Thistle.*
*Lin. spec.* 667. *Reich.* 2. 467. *hort. cliff.* 182. 8. *Brown. jam.* 238. 9.
Cereus gracilis. *Mill. dict. n.* 8? an pot. heptagonus n. 6.
Cer. altiſſ. grac., fructu extus luteo, intus niveo, &c. *Sloan. jam.* 2. 158. *Raii dendr.* 22. *Trew. ehret. t.* 14.
*Erect, long, eight-angled; angles compreſſed waved, ſpines longer than the wool.*

9. Cactus lanuginoſus. *Woolly upright Torch-Thistle.*
*Lin. spec.* 667. *Reich.* 2. 467. *hort. cliff.* 182. 7.
Cereus repandus. *Mill. dict. n.* 5.
Cer. curaſſavicus erectus maximus, fructu rubro non ſpinoſo, lanugine flaveſcente. *Herm. par.* 115. *Boerh. n.* 5, 6. *Raii dendr.* 23. *n.* 5.
*Erect, long, with about nine angles; angles obſolete; ſpines ſhorter than the wool.*

10. Cactus peruvianus. *Peruvian upright Torch-Thistle.*
*Lin. spec.* 667. *ſyſt.* 459. *Reich.* 2. 467. *hort. cliff.* 181. 6. *upſ.* 120. 5. *Brown. jam.* 238. 8. *Swartz obſ.* 199.
Cereus lanuginoſus. *Mill. dict. n.* 3.
Cer. erectus, fr. rubro non ſpinoſo. *Herm. par.* 114. *Boerh. n.* 4. *Raii dendr.* 22. *n.* 4.
Cer. peruv. ſpinoſus, fr. rub. nucis magnitudine. *Bauh. pin.* 458. *Raii hiſt.* 872. 1467. *Cer.* 1015. *emac.* 1179. *f.* 3. *Park.* 1628.
Euphorbii arbor cereæ effigie. *Lob. ic.* 2. 25.
Cer. craſſiſſimus, fr. intus & extus rubro. *Sloan. jam.* 2. 157. *Raii dendr.* 21. (*ciſſ.*)
*Erect, long, with about ten blunt ſide angles.*

11. Cactus Royeni. *Royen's upright, or nine-angled Torch-Thistle.*
*Lin. spec.* 668. *ſyſt.* 459. *Roy. lugdb.* 279.
Cereus Royeni. *Mill. dict. n.* 7.
Cer. erect. grac. ſpinoſiſſimus: ſp. flavis, polygonus, lanugine alba palleſcente. *Boerh. lugdb.* 1. 293. *n.* 7, 8.
Cer. erectus, fr. rubro non ſpinoſo, lanuginoſus. *Herm. par.* 115? ſee *n.* 9.
*Erect, jointed, nine-angled: joints ſubovate, ſpines equal in length to the wool.*

*** Cereuſes *creeping, with roots from the ſides.*

12. Cactus grandiflorus. *Great-flowering creeping Cereus.*
*Lin. spec.* 668. *Reich.* 2. 468. *hort. cliff.* 182. 10. *upſ.* 121. 11.
Cereus grandiflorus. *Mill. dict. n.* 11.
Cer. ſcandens minor polygonus articulatus. *Herm. par.* 120. *Mill. fig. t.* 90. *Boerh. n.* 11.
Cer. gracilis ſc. ramoſus plerumque ſexangularis, fl. ingenti atque fragranti, &c. *Trew. ehr. t.* 31, 32. *Eph. nat. cur.* 1752. ix. *t.* 11, 12, 13. *Volk. heſp.* 1. *t.* 234.
*Creeping, with about ſive angles.*

13. Cactus flagelliformis. *Pink-flowering creeping Cereus.*
*Lin. spec.* 668. *Reich.* 2. 468. *hort. upſ.* 121. 12. *Curt. mag. t.* 17. *Amer. Nutrimb. t.* 154. *Brown. jam.* 238. 7. *Swartz obſ.* 200.
Cereus flagelliformis. *Mill. dict. n.* 12.
Cer. minimus ſcandens polygonus ſpinoſiſſimus, fl. purpureo. *Ehret. ſel.* 2. *f.* 2. *Trew. ehret. t.* 30.
Ficoides amer. ſ. Cereus min. ſerpens amer. *Pluk. alm.* 148. *t.* 158. *f.* 6. *Sloan. jam.* 2. 158. *Raii dendr.* 22. *n.* 2.
*Creeping, ten-angled.*

[14. Cactus paraſiticus. *Paraſitical creeping Cereus.*
*Lin. spec.* 668. *Reich.* 2. 469.

15. Cactus pendulus. *Slender Cereus.*
*Swartz prodr.* 77. *Brown. jam.* 238. 11. *Ait. hort. kew.* 2. 153.
Caſſyta baccifera. *Mill. illuſtr.*
Rhipſalis Caſſutha. *Gaertn. fruct.* 1. 137. *t.* 28.
Viſcum. *Sloan. jam.* 2. 93. 7. but not the figure.
*Pendulous, branches in whorls round ſmooth without prickles.*]

16. Cactus triangularis. *Triangular Cereus*, or *Strawberry Pear.*
*Lin. spec.* 669. *ſyſt.* 460. *Reich.* 2. 469. *hort. cliff.* 182. 11. *upſ.* 121. 13. *Brown. jam.* 238. 6. *Jacqu. amer.* 152. *edit.* 2. 75. *Act. helv.* 5. 268. *t.* 2.
Cereus compreſſus. *Mill. dict. n.* 10.
Cer. amer. triang. radicoſus. *Bradl. succ.* 1, 4. *t.* 3. *Eph. nat. cur. vol.* 9. *app.* 199. *t.* 10. *f.* 14. & *vol.* 10. *app.* 349. *t.* 3.
Melocactus amer. repens trigonus, fl. albo, fructu violaceo. *Plum. ic.* 199, 200?
β. C. triangularis foliolus. *Jacqu. amer.* 152. *t.* 181. *f.* 65.
*Creeping triangular.*

**** Opuntias, *compreſſed with proliferous joints.*

[17. Cactus moniliformis. *Necklace Indian Fig.*
*Lin. spec.* 669. *Reich.* 2. 469.
Melocactus, ex plurimis globulis Opuntiæ modo naſcentibus, ſpinoſiſſimis. *Plum. spec.* 19. *ic.* 198. *Tournef. inſt.* 653.
*Proliferous-jointed; joints globular thorny glomerate.*]

18. Cactus Opuntia. *Common Indian Fig*, or *prickly Pear.*
*Lin. spec.* 669. *Reich.* 2. 470. *hort. cliff.* 183. 15. *upſ.* 120. 6. *Brown. jam.* 237. *n.* 2. *Allion. pedem. n.* 1932. *Plenck, ic. t.* 373.
Opuntia vulgaris. *Mill. dict. n.* 1. *fig. t.* 191. *Hall. helv. n.* 1099. *Bauh. hiſt.* 1. 154. *fig.*
Ficus indica, fol. ſpinoſo, fr. majore. *Bauh. pin.* 458.
*Proliferous-jointed-loſe; joints ovate, ſpines ſetaceous.*

19. Cactus Ficus indica. *Oblong Indian Fig.*
*Lin. spec.* 669. *Reich.* 2. 470. *hort. cliff.* 183. 13. *upſ.* 120. 7. *Linn. cochineb.* 306.
Opuntia Ficus indica. *Mill. dict. n.* 2.
O. fol. oblongo media. *Tourn. inſt.* 239.
Ficus indica. *Matth. p.* 234. *f.* 3. *Ger.* 1329. *emac.* 1512. — major. *Park. theat.* 1497. *Raii hiſt.* 1464.
*Proliferous-jointed, joints ovate-oblong, ſpines ſetaceous.*

20. Cactus Tuna. *Great Indian Fig*, or *upright prickly Pear.*
*Lin. spec.* 669. *Reich.* 2. 470. *hort. cliff.* 183. 14. *upſ.* 120. 8. *Brown. jam.* 237. 3.
Tuna major, ſpinis validis flavicantibus, fl. gilvo. *Dill. elth.* 396. *t.* 295. *f.* 380.
Opuntia Tuna. *Mill. dict. n.* 3.
O. major, validiſſ. ſpini munita. *Tourn. inſt.* 239.
O. major, fol. oblongo-rotundo, ſp. longis & validiſſ. fl. luteo. *Sloan. jam.* 2. 149. *t.* 224. *f.* 1. (fruit). *Raii dendr.* 19.
β. O. elatior. *Mill. dict. n.* 4. Spines very long, black.
Tuna elatior, ſp. validis nigricantibus. *Dill. elth. t.* 294. *f.* 379.
γ. O. maxima. *Mill. dict. n.* 5. Joints very thick, long and broad; ſpines unequal.
O. max., fol. ſpinoſo latiſſ. & longiſſimo. *Tourn. inſt.* 240. *Raii dendr.* 19. *n.* 2.
*Proliferous-jointed; joints ovate-oblong; ſpines ſubulate.*

21. Cactus cochenilliſer. *Cochineal Indian Fig.*
*Lin. spec.* 670. *Reich.* 2. 471. *hort. upſ.* 121. 10. *Brown. jam.* 237. *n.* 4.
Tuna mitior, fl. ſanguineo, cochenilliſera. *Dill. elth.* 399. *t.* 297. *f.* 383.
Opuntia cochinclifera. *Mill. dict. n.* 6.
O. max. fol. oblongo-rotundo majore, ſpinulis mollibus obſito, fl. ſtriis rubris variegato. *Sloan. jam.* 2. 152. *t.* 8. *f.* 1, 2. *Raii dendr.* 19.
Ficus indica major lævis ſ. non ſpinoſa vermiculos proferens.

proferens. *Pluk. alm.* 146. *t.* 281. *f.* 2. *Rati hift.* 1465.

*Proliferus-jointed; joints ovate-oblong, almoft unarmed.*

22. Cactus curaſſavicus. *Curaſſoa* or *leaft Indian Fig*, or *Pinpillow*.

*Lin. ſpec.* 670. *Reich.* 2. 471. *hort. cliff.* 182. 12. *upſ.* 120. 9.

Opuntia curaſſavica. *Mill. dict. n.* 7.

O. minima americana ſpinoſiſſima. *Bradl. ſucc. t.* 5. *f.* 4.

Ficus indica, ſ. O. curaſſ. minima. *Comm. hort.* 1. 107. *t.* 56.

F. ind. ſ. O. minor cauleſcens—ramis cineritiis, ſpinoſiſſima. *Pluk. alm.* 147. *t.* 281. *f.* 3.

*Proliferous-jointed; joints cylindric-ventricoſe compreſſed.*

23. Cactus Phyllanthus. *Spleenwort-leaved Indian Fig. Lin. ſpec.* 670. *Reich.* 2. 471. *hort. cliff.* 182. 16. *upſ.* 120.

Opuntia Phyllanthus. *Mill. dict. n.* 9.

Cereus ſcolopendri fol. brachiato. *Dill. elth.* 73. *t.* 64. *f.* 74.

Phyllanthus amer., ſinuoſis fol. longis, &c. *Pluk. alm.* 205. *t.* 247. *f.* 5.

Fic. ſ. O. non ſpinoſa, ſcolopendriæ fol. ſinuato. *Rati dendr.* 28. *n.* 7.

*Proliferous, enſiform-compreſſed, ſerrate-repand.*

[24. Cactus alatus.

*Swartz prodr.* 77. *Brown. jam.* 237. 5.

Opuntia non ſpinoſa. *Sloan. jam.* 2. 159. 17.

*Proliferous, enſiform compreſſed crenate.*]

25. Cactus ſpinoſiſſimus. *Cluſter-ſpined Indian Fig. Mart. hort. cantabr.* 88. *Ait. hort. kew.* 2. 155.

Opuntia ſpinoſiſſima. *Mill. dict. Houſt. M. S. S.*

*Stem upright compreſſed, branches oppoſite bifarious compreſſed, ſpines briſtle-ſhaped.*

26. Cactus Pereſkia. *Barbadoes Gooſeberry.*

*Lin. ſpec.* 671. *Reich.* 2. 472. *hort. upſ.* 122. 14. *Brown. jam.* 237. 1.

Pereſkia. *Linn. hort. cliff.* 183. — aculeata. *Mill. dict.*

P. acul., fl. albo, fructu flaveſcente. *Plum. gen.* 35. *Dill. elth.* 305. *t.* 227. *f.* 294.

Malus amer. ſpinoſa, portulacæ fol. fructu ſoliofo, ſem. reniformi ſplendenti. *Comm. hort.* 1. 135. *t.* 70.

Portulaca amer. latifolia, ad ſol. ortum lanugine obducta, ſungioribus aculeis horrida. *Pluk. alm.* 304. *t.* 215. *f.* 6.

Groſſulariæ fructu majore arbor ſpinoſa, fructu ſoliofo e viridi-albicante. *Sloan. jam.* 2. 86. *Raii dendr.* 27.

*Stem arborcous round, prickles double recurved, leaves lanceolate-ovate.*

[27. Cactus portulacifolius. *Purſlain-leaved Indian Fig.*

*Lin. ſpec.* 671. *Reich.* 2. 472.

Opuntia arbor ſpinoſiſſima, fol. portulacæ cordatis. *Plum. ſpec.* 6. *ic.* 190. *t.* 197. *f.* 1.

*Stem round arborcous thorny; leaves wedge-form retuſe.*

DESCRIPTIONS, *&c.*

This genus conſiſts of ſucculent plants, permanent in duration, ſingular and various in ſtructure; generally without leaves, and having the ſtem or branches jointed; for the moſt part armed with ſpines in bundles, with which, in many ſpecies, briſtles are intermixed. Theſe bundles of ſpines are placed on the top of the tubercles in the *Smaller Melon-Thiſtle* (n. 1.), which is tubercled all over, and produces its flowers between the tubercles. In the *Great Melon-Thiſtle* (n. 2.) the ſpines are ranged in a ſingle row on the ridge of the ribs. Theſe are of an ovate or globular form. The *Torch-Thiſtles* (n. 3—11.) on the contrary are ſlender, riſe up high, are jointed and branched; many of them are almoſt cylindrical, with from five to ten ſhallow ribs, ſome however are ſquare or three-cornered. The ſtructure of the *Creeping Cereuſes* (n. 12, 13, &c.) is the ſame with theſe, except that the ſtems are weak and cannot ſupport themſelves; they therefore ſeek ſupport from trees, and throw out roots from the ſtem, like Ivy. In the *Indian-Figs* (n. 17. &c.) the branches are jointed, and flatted like the ſole of a ſhoe; the bundles of ſpines or briſtles are ſcattered over the ſurface, and the flowers are produced from the edge of the extreme branches. In the *Phyllanthus* (n. 23.) the branches are thinner, and may fairly be denominated leaves, they are indented along the edge, and the flowers come out ſingly from the indentures. This ſeldom has any ſpines. *Pereſkia* has a round ſtalk with leafy branches; the leaves alternate, flat, and thick; the prickles are large and ſtiff, and come out in bundles on the ſtalk and branches, chiefly at the axils; the flowers are produced ſeveral together from the axils alſo. In this and the Indian-Figs the flowers are pitcher-ſhaped; in the other ſpecies they are ſubcylindrical and longer; in Phyllanthus very long. The fruit, in ſome of the ſorts is ſmall, like Currants; but in moſt, it is larger, and ſhaped like a Fig, whence their name of *Indian-Fig*[a].

This genus, ſcattered by the old writers and Mr. Miller, under the names of *Cactus*, *Cereus*, *Opuntia*, and *Pereſkia*, is here collected, after the example of Linneus.

Theſe ſingular plants are all natives of the continent of South America and the Weſt-Indian iſlands.]

I. *Melon-Thiſtles* or *Turk's-caps.*

1. This differs from the ſecond in being ſmaller, and in being covered with tubercles, between which the flowers and fruit come out, round the middle of the plant. The flowers appear in July and auguſt. The fruit is of a fine ſcarlet colour, and continuing freſh upon the plants through the winter, they are very beautiful at that ſeaſon.

[Linneus obſerves[b], that it is fortified all over with bearded *papillæ* like the *Meſembryanthemum*; that it is milky like the *Euphorbia*; and that it has the fructification of *Cactus*.

Ray mentions, that it was cultivated at Fulham, in the garden of Biſhop Compton, "the ever to be celebrated patron of botany and polite arts." It was alſo in the royal garden at Hampton Court, in 1690[c].]

β. The Childing variety, is but little larger than the other, growing nearly in the ſame form; but this produces a great number of young plants from the ſides, by which it is increaſed. It produces tufts of a ſoft white down upon the tubercles or knobs, and alſo between them, ſo that the whole plant appears as if it were covered with fine cotton. The flowers are larger, but have not been ſucceeded by fruit in England; inſtead of it young plants have been thruſt out the following ſeaſon from the ſame places where the flowers had appeared.

2. The Great Melon-Thiſtle appears like a large fleſhy green Melon, with deep ribs, ſet all over with ſtrong, ſharp thorns. When it is cut through the middle, the inſide is found to be a ſoft, green, fleſhy ſubſtance very full of moiſture. The flowers and fruit are produced in circles round the upper part of the cap.

Some of theſe which have been brought to England, have been more than a yard in circumference, and two feet and a half high including the cap. But in the Weſt Indies there are plants near twice as large.

[Linneus obſerves that this plant reſembles a hedge-hog in its form and ſpines; and on the top has a diſcoid, convex, villoſe body, from which the flowers proceed[d].]

β, *δ*. Mr. Miller received the varieties with white ſpines and with ſpiral ribs from Antigua; and never perceived the leaſt diſpoſition in them to produce fruit, or even caps.

γ. Was brought into England by Dr. William Houſtoun, who procured the plants from Mexico. This has two orders of thorns, in one of which

[a] Juſſieu gen. [b] Hort. cliff. [c] Hort. kew. [d] Hort. cliff.

they are ſtraight, and ſet on at the joints in cluſters, ſpreading out from the centre each way like a ſtar; and in the middle of each cluſter is produced one broad flat thorn near two inches in length, which ſtands erect, is recurved at the point, and of a browniſh red colour. Theſe thorns are by the inhabitants of Mexico, ſet in gold or ſilver, for tooth-picks.

[In Linneus's *mantiſſa*, it is ſaid to be roundiſh, with fourteen angles; there are many dots on the back of the angles, faſcicled with acerose ſpines; the ſpine in the middle of each faſcicle is large and recurved.]

Mr. Miller having made four ſpecies of this Great Melon-Thiſtle, thinks that if the iſlands in the Weſt Indies were examined, many more ſorts would be found.

Theſe ſtrange plants commonly grow upon the ſteep ſides of rocks in the hotteſt parts of America, where they ſeem to be thruſt out of the apertures, having little or no earth to ſupport them; their roots ſhooting down into the fiſſures of the rock to a conſiderable depth, ſo that it is troubleſome to get the plants up. As they delight in ſuch rocky places, they ſeldom live long when tranſplanted into a better ſoil.

In times of great drought the cattle repair to the barren rocks where theſe plants grow, rip them up with their horns, tear off the outſide ſkin, and greedily devour all the fleſhy moiſt part.

The fruit is frequently eaten by the inhabitants of the Weſt Indies. It is about three quarters of an inch in length, of a taper form, drawing to a point at the bottom, but blunt at the top: the taſte is an agreeable acid.

[Gerarde complains, that the Great Melon-Thiſtle would not grow with him, by reaſon of the coldneſs of the climate. Ray had the plants in pots, ſix years old. Fairchild of Hoxton raiſed many young plants from the ſeed. Bradley cultivated it in 1727. He in his Philoſophical account of the works of Nature, publiſhed in 1721: and Miller, in the Floriſt's Dictionary 1724, mention, that one was then to be ſeen in the ſtove at Hampton Court. It is frequently brought from the Weſt Indies, but ſeldom continues long in our climate.

II. *Torch-Thiſtles* or *Torch-wood.*

3. This has the habit of the ſixteenth, but is upright, and eight or ten feet high: when it grows higher it wants ſupport, but does not put out any roots from the ſtem. The flower is whitiſh, very handſome, but has hardly any ſmell; it is half a foot in diameter, and blows in the night. The fruit is of the form and ſize of a hen's egg, of a ſhining ſcarlet colour on the outſide; the pulp is white, fleſhy, ſweet, eatable, full of ſmall black ſhining ſeeds.

Native of Carthagena, and the iſle of Mango[s].

4, *&c.* The angular upright Cacturſes, are commonly called Torch-Thiſtles, and in the Weſt Indies Torch-wood, becauſe when they grow old they will burn, and the Indians uſe them as flambeaux. Many of them are figured by Plumier, but are by no means perfectly known; they remain therefore to be well deſcribed by travellers.] They differ in the ſize of their ſtems, the number of the angles, and the length of the ſpines; [but they have not all flowered in England. Mr. Miller received ſeveral of the ſpecies from the Britiſh iſlands in the Weſt Indies ſo early as 1728.

4. Linneus ſays, that his plant of *Cactus heptagonus* was exactly ovate, with ſeven angles deeply cut, and that it continued the ſame for many years, though it grew well: others ſay, that they have ſeen it a foot and half and two feet high[t].

The *Cereus heptagonus* of Miller does not ſeem to be the ſame with the *Cactus heptagonus* of Linneus. It rather agrees with his *repandus*.

This has not flowered in England.]

[s] Jacquin. [t] Hort. cliff.

5. The angles of this are compreſſed, and far aſunder. It is very ſubject to put out many ſhoots from the ſides, which ſtops its upright growth, ſo that the plants rarely riſe more than four or five feet high.

[It was cultivated by Mr. Miller in 1731, and flowers in july[u].]

6. The angles of the hexangular Torch-Thiſtle are armed with ſharp ſpines, coming out in cluſters at certain diſtances, and ſpreading from a centre every way: the outer ſubſtance of the plant is ſoft, herbaceous, and full of juice, but in the middle there is a ſtrong fibrous circle running the whole length, which ſecures the ſtems from being broken by winds. They will riſe to the height of thirty or forty feet, if their tops are not injured, and they have room to grow; but whenever the ſtems are cut, or injured, they put out ſhoots from the angles, immediately under the wounded part, and frequently one or two lower down: theſe, if they are not cut off, form diſtinct ſtems, and grow upright: but they are ſeldom ſo large as the principal ſtem, eſpecially if more than one be left on a plant. The flowers come out from the angles on the ſide of the ſtem; they have a thick, fleſhy, ſcaly, round, channelled, hairy pedunele, ſupporting a ſwelling germ, upon the top of which ſits the ſcaly, prickly calyx, cloſely ſurrounding the corolla, till a little time before it expands. The flower is then as large as that of a Hollyhock: the inner petals are white, and crenated at their extremity. The calyx is green with ſome purple ſtripes. It is not ſucceeded by fruit in this country, nor do the plants often produce flowers; but when they do there are generally ſeveral. The uſual time of flowering is in july.

This has been the common ſort in the Engliſh ſtoves. It grows naturally in Surinam, whence it was brought to Holland, where it produced flowers in the year 1681; and from the Dutch gardens, moſt parts of Europe have been ſupplied with this plant.

[In 1690, it was introduced here by Mr. Bentick. Mr. Bradley ſays, "this beautiful plant was firſt raiſed in England by Mr. Adam Holt, at the Biſhop of London's (Compton) palace at Fulham; and that it flowered at Sir Richard Child's at Wanſtead."

7. Stem jointed; the internodes a foot long. Knots of ſpines come out along the edge without any viſible nap among them. Sometimes, but rarely, the ſtem has ſix angles: it never puts out any roots, and though ſlender and weak, grows upright[x]. It was introduced about 1769[y].

8. Miller puts Sloane's ſynonym, which Linneus attributes to this ſpecies, to his *gracilis* n. 8. which he deſcribes as] having the ſmalleſt ſtem of any of the upright ſorts; generally nine obtuſe angles armed with ſhort ſpines, placed at farther diſtances than thoſe of the other ſorts, and the channels between the angles, not near ſo deep. The flowers are produced from the angles, in the ſame manner as the ſixth; but they are ſmaller, and the calyx is of a light green, without any mixture of colour. The fruit is about the ſize and ſhape of a Bergamot Pear, having many ſoft ſpines on the ſkin; the outſide is a pale yellow, the inſide very white, full of of pulp, having a great number of ſmall black ſeeds lodged in it. This ſort frequently flowers in july, and in warm ſeaſons will perfect its fruit, which has very little flavour in this country. [It is however frequently ſerved up at table in the Weſt India iſlands.]

Miller characterizes his *heptagonus* in the ſame manner as Linneus does this ſpecies; namely, as having eight angles, and ſpines longer than the wool. He adds Boerhaave's ſynonym of *Cereus erect, very thick and extremely angular, with many very long white ſpines, and yellow wool.*

[Linneus doubts whether this may not be a variety of the next ſpecies[z].

[u] Hort. kew. [x] Linn. hort. cliff. [y] Hort. kew. [z] Hort. cliff.

9. This is very ſpiny. The ſpines, eſpecially the younger ones, have a browniſh wool about them. The fruit is of the ſize and form of a hen's egg, red on the outſide and without ſpines[1].

Native of America. It was introduced in 1690, by Mr. Bentick[2].

10. The ſtem is a fathom or more in height, almoſt ſimple, two or three inches in diameter, blunt at the end, having ten deep angles, ſet with thorns, crowded eight or ten together, about an inch in length, ſpreading, the inner ones ſhorter, tomentoſe at the baſe. The angles at the top have the ſpines concealed among the wool, and they come out gradually as the ſtem grows up. The wool is white and brown. Flowers ſeſſile, in the very angles of the extremities, ſcattered; ovate at the baſe, two inches long, elongated, red. Berry unarmed, blood red within, eatable[3]. Native of Peru and Jamaica, in dry open ſituations on the coaſt. Introduced by Mr. Miller in 1728[4].]

Miller diſtinguiſhes his *peruvianus* by its having very ſtrong ſpreading ſpines. He gives Herman's ſynonym of *Cereus upright very large, with a red thorny fruit*. To his *lanuginoſus* he gives the ſame ſynonym from Herman, that Linnæus does to his *peruvianus*, namely *of a red fruit without thorns*.

11. Introduced in 1728, by Mr. Miller[5].

III. *Creeping Cereuſes.*

Theſe are remarkable for the beauty and ſweetneſs of their flowers.]

12. The great night-flowering Creeping Cereus when arrived to a ſufficient ſtrength, will produce many exceeding large, beautiful, ſweet-ſcented flowers, like moſt of this kind, of very ſhort duration, ſcarcely continuing ſix hours full blown; nor do the flowers ever open again when once cloſed. They begin to open between ſeven and eight of the clock in the evening, are fully blown by eleven, and by three or four in the morning they fade, and hang down quite decayed; but during their ſhort continuance, there is ſcarcely any flower of greater beauty, or that makes a more magnificent appearance; for the calyx of the flower, when open, is near a foot diameter; the inſide of which, being of a ſplendid yellow colour, appears like the rays of a bright ſtar, the outſide is of a dark brown; the petals being of a pure white add to the luſtre; the vaſt number of recurved ſtamens ſurrounding the ſtyle in the centre of the flower make a fine appearance: add to all this the fine ſcent of the flower, which perfumes the air to a conſiderable diſtance: there is ſcarce any plant which deſerves a place in the hot-houſe ſo much as this, eſpecially as it may be trained againſt the wall, where it will not take up any room. The uſual ſeaſon of its flowering is in july, and when the plants are large many flowers will open the ſame night, and there will be a ſucceſſion of them for ſeveral nights together. Sometimes ſix, eight, or ten flowers open at the ſame time on one plant, making a moſt magnificent appearance by candle-light; but none of them are ſucceeded here by any appearance of fruit.

[Native of Jamaica and Vera Cruz. Introduced before 1700, in the royal garden at Hampton-court[6].]

13. The Pink-flowered Creeping Cereus produces a greater number of flowers than the foregoing ſort: they come out in may, and ſometimes earlier, when the ſeaſon is warm: the petals are of a fine pink colour both within and without, they are not ſo numerous, and the tube of the flower is longer than that of the other. Theſe flowers keep open three or four days, provided the weather, or the place where the plants ſtand be not too warm; and during their continuance they make a fine appearance. This ſort has very ſlender trailing branches, which require a ſupport; they are not jointed, nor do they extend ſo far as thoſe of the other ſort, ſo that they may be eaſily trained to a little treſſis of ſticks, and the plant may be conveyed into the houſe, whilſt in flower, to adorn any of the rooms. The flowers are ſo beautiful, and are produced in ſuch great plenty, that this may be placed in the firſt claſs of exotic plants. It has produced fruit in the ſtove at Cheliſea, but the fruit did not ripen.

This ſort grows naturally in Peru, whence it was ſent to the royal garden at Paris; and in the year 1734, Mr. Miller had ſome cuttings of it from Bernard de Juſſieu, which ſucceeded in the Cheliſea garden.

[14. This is probably the root of ſome ſpecies of Epidendrum.

15. Stem roundiſh, green, woody, ſtriated, as big as a gooſe's quill; divided into ſeveral ſlender, round, ſtriated branches, and they into twigs, at diſtances of one, two, and three inches; at which diviſions are ſet little twigs, an inch and half long in whorls[7]. It grows chiefly on the largeſt trees in Jamaica, hanging commonly to the length of three or four feet[8].

Introduced in 1758, by Mr. Miller. It flowers in ſeptember[9].

Gærtner deſcribes the fruit as an inferior berry, crowned with the rudiment of the flower, ſpherical, ſnow white, pellucid, one-celled: pulp watery. Seeds eight or twelve, conglomerate in the centre of the fruit, ſmall oblong, ſomewhat angular or wedge-form compreſſed and thicker on the outſide, very ſlenderly dotted in ſtreaks, ferruginous. He keeps it diſtinct from this genus, becauſe the embryo of *Cactus* is ſlightly ſpiral, and the albumen of the ſeed farinaceous; whereas there is no albumen in this, and the embryo fills the whole cavity of the ſeed.

16. This climbs up trees to a conſiderable height, ſupporting itſelf by throwing out roots; it alſo covers ſhady rocks. The fruit is the beſt flavoured of any of the ſorts, being ſlightly acid with a mixture of ſweetneſs, pleaſant and cooling. It has no leaves, but is ſomewhat irregular with ſcars. It is a native of the Weſt India iſlands. In Martinico, where the inhabitants eſteem the fruit, it is called *Poirier de Chardon* or Thiſtle Pear[10].]

It firſt flowered here in the royal garden at Hampton-court, and at the Marquis of Rockingham's at Wentworth-caſtle, in Yorkſhire.

[8. The fruit is much larger, of a ſhining ſcarlet colour, and clothed with leaves which are almoſt entire: the pulp is white, ſweetiſh, eatable, but having very little flavour: the ſeeds are black and gloſſy. It is a native of the iſland of St. Euſtatia[11].

IV. *Indian Figs* or *Prickly Pears.* In French *Raquette.*

17. This is a ſeſſile plant, conſiſting of globular joints growing out of each other, armed with very long, ſharp, ſubulate ſpines, commonly ſolitary but ſometimes coming out two together. The flowers are produced from the upper joint, they are ſeſſile, the tube is long and ſcaly, the petals ſpreading and ſinuous, the ſtyle very long and prominent, and the ſtigma very broad and many-parted. It is a very ſingular plant, and the leaſt known of any in this genus[12]. Native of South America.]

18. The joints or branches of the Common Opuntia or Indian Fig are ovate, compreſſed, and have very ſmall leaves coming out in knots on their ſurface, as alſo on their upper edges, which fall off in a ſhort time; and at the ſame knots there are three or four ſhort briſtly ſpines, which do not appear unleſs they are cloſely viewed; but on being handled they enter the ſkin, are troubleſome, and very difficult to get out again. The branches ſpread near the ground, and frequently trail upon it, putting out new roots, and thus extending to a conſiderable diſtance, but never riſing in height; they are fleſhy and herbaceous whilſt young, but as they

[1] Herman. [2] Hort. kew. [3] Swartz. [4] Hort kew. [5] Ibid. [6] Ibid. [7] Sloane. [8] Browne, [9] Hort. kew. [10] Ibid. [11] Jacquin. [12] Plumier.

grow old become drier, of a tough contexture, and have woody fibres. The flowers come out on the upper edges of the branches generally, though sometimes they are produced on their sides. The skin or cover of the fruit is set with small spines in clusters, and the inside is fleshy of a purple or red colour. It flowers here in july and auguſt, but unleſs the ſeaſon is very warm, the fruit will not ripen in England.

This ſort is now found growing wildon the ſides of the roads about Naples and in other parts of Italy, in Sicily, Spain, [Portugal, the Valais, the South of France, Minorca, &c.]: but it is probable that it was brought originally from America, of which all the other ſorts are natives.

[Gerard ſays, that this plant was brought from Virginia into Italy, Spain, England, &c. and that he could never make it bear fruit here, though he beſtowed great pains and coſt in keeping it from the injury of our old climate. He adds, that it grows in Barbary, and that his ſervant William Marſhall found it abundantly in the iſland of Zante.]

Mr. Miller received ſome branches of it from Mr. Peter Collinſon, who aſſured him they were ſent from Newfoundland, where the plants grow naturally, and which is much farther to the north than it was before known to grow. How it endures the cold of that country is inconceivable, for though it will live abroad in England, in a warm ſituation and dry ſoil, yet in ſevere winters it is generally deſtroyed, if not protected from froſt.

[That of which Mr. Miller has given a plate in his figures of plants, came from Nova Scotia, where it is ſaid to be common. He obſerves, that it is a much larger plant than the common ſort, and armed with ſtronger prickles; that the fruit alſo is much larger, and of a deeper purple colour; the joints rounder and more compreſſed; beſides that it is hardier, and grows more upright.]

19. The oblong-branched Indian Fig, has the branches growing more upright than thoſe of the foregoing, and they are armed with long briſtly ſpines, coming out in cluſters on both the compreſſed ſides, and ſpreading open like the rays of a ſtar. The flowers come out from the upper edges of the leaves, like the former; but they are larger, and of a brighter yellow colour. The fruit is alſo larger, and of a deeper purple colour; the outer ſkin is alſo armed with longer ſpines. This is the moſt common ſort in Jamaica, and upon the fruit of this the wild ſort of Cochineal inſect feeds, which is called Silveſter. Some of the plants were ſent with the live inſects upon them from Jamaica, by Dr. Houſtoun, who was writing a hiſtory of them. Theſe inſects kept alive upon the plants here three or four months. If the fruit be eaten, it will dye the urine of a bloody colour.

[This ſeems to be a native not only of South America, but alſo of the Eaſt Indies, Cochinchina and Japan, and Madeira; or perhaps rather has been tranſplanted thither.]

20. This has ſtronger branches than the foregoing ſort, and they are armed with larger thorns, which are awl-ſhaped, whitiſh, and in cluſters. The flowers are large, of a bright yellow colour; and the fruit is ſhaped like that of the foregoing.

β. This grows taller, the branches are larger, thicker, and of a deeper green, and are armed with ſtrong black ſpines, coming out in cluſters which are far aſunder. The flowers are ſmaller, and of a purpliſh colour, as are alſo the ſtamens; the fruit is of the ſame form with that of the common ſort, and does not ripen here.

γ. Is the largeſt of all the ſorts yet known. The joints are more than a foot long, and eight inches broad; they are very thick, of a deep green colour, and armed with a few ſhort ſpines; the older branches of this often become almoſt taper, and are very ſtrong. It has not flowered, though many of the plants were more than ten feet high.

[This ſort makes very ſtrong fences; the prickles are ſo ſharp, that cattle are afraid of coming near them; and it ſpreads very much both by the joints and the ſeed. When the iſland of St. Chriſtopher was to be divided between the Engliſh and the French, three rows of the *Tuna* were planted by common conſent between the boundaries[a].

Dr. Smith, in his very ingenious paper upon the irritability of vegetables[b], informs us, that the long and ſlender ſtamens of the flower are very irritable; and that if a quill or feather be drawn through them, in the ſpace of two or three ſeconds they begin to lie down gently on one ſide, and in a ſhort time become recumbent at the bottom of the flower.

It is a native of South America and Jamaica; and was cultivated in 1732, at Eltham, by James Sherard, M. D.[c]]

21. This, which is ſuppoſed to be the ſort upon which the Cochineal inſect feeds, has oblong, ſmooth, upright branches, riſing to the height of eight or ten feet, having ſcarcely any ſpines on them, and the few which there are ſo ſoft as not to be troubleſome when handled. The flowers are ſmall, and of a purple colour; they do not ſpread open, appear late in autumn with us, and the fruit drops off in winter without coming to perfection.

[The Cochineal inſect feeds on many ſucculent plants, but moſt commonly on the Cactus genus. For this reaſon the Indians propagate large quantities of the moſt harmleſs ſpecies to breed the inſects upon[d].

Dampier's account is as follows:

The plant on which the Cochineal inſect feeds is like the Prickly Pear, about five feet high, and as prickly; only the leaves are not quite ſo big, but the fruit is bigger. On the top of the fruit there grows a red flower: this when the fruit is ripe, falls down on the top of it, and covers it ſo that no rain or dew can wet the inſide. A day or two after, the flower being ſcorched up by the heat of the ſun, the fruit opens wide, and the inſide appears full of ſmall red inſects. The Indians, when they perceive the fruit open, ſpread a large linen cloth, and then with ſticks ſhake the plant, to diſturb the inſects, ſo that they take wing to be gone, but keep hovering over the plant, till by the heat they fall down dead on the cloth, where the Indians let them remain two or three days till they are dry. The Cochineal plants are called by the Spaniards *Tuna*. They are planted in the country about Guatimala, Cheape, and Guaxaca, in the kingdom of Mexico.

The difference, in point of goodneſs, obſervable in the Cochineal, is entirely owing to the plant it feeds upon. The Prickly Pear (*C. Tuna*) ſo abundant in Jamaica, is covered with the inſects, but not having their proper food, they are in general diminutive, and have very little red tincture in their bodies.

Theſe plants bear a ſucculent fruit at their extremities, filled with a delicate red coloured juice. This is the natural food of the inſect. The exuviæ and animal ſalts of the inſect are, from the minuteneſs of its parts, inſeparable from the eſſential principles of the dye, and muſt diminiſh the brilliancy of the colour: and this has put ſome perſons upon inſpiſſating the juice of the fruit itſelf.

The ripe fruit is ſaid to check fluxes by its mild reſtringency; it is alſo a powerful diuretic, and ſometimes imparts a tinge to the urine[e].

This alſo was cultivated at Eltham in 1732[f].]

22. The leaſt Indian Fig has thicker more ſwelling joints than the other ſorts, cloſely armed with ſlender white ſpines. The branches ſpread out on every ſide, and where they have no ſupport fall to the ground, very often ſeparating at the joints, and as they lie upon the ground putting out roots, and forming new plants. This ſort very rarely produces flowers in England. In the Weſt Indies it is called Pinpillow, from the appearance which the branches have to a pincuſhion ſtuck full of pins.

[a] Sloane. [b] Philoſ. tranſ. vol. 78. part 1. p. 161. [c] Hort. kew. [d] Browne. [e] Long. [f] Hort. kew.

It is said to grow naturally at Curaſſao. [Mr. Bentick introduced it here in 1690[1]. It flowered at Badminton, in the garden of that incomparable patroneſs of natural learning, the late Dutcheſs of Beaufort, as Bradley expreſſes it.]

23. Spleenwort-leaved Indian Fig has very thin branches, which are indented regularly on their edges, like Spleenwort; they are of a light green, ſhaped like a broad-ſword, and without ſpines. The flowers come out from the ſide, and at the end of the branches, and are of a pale yellow colour. The fruit rarely ripens in England.

It grows naturally in the Braſils, [Surinam, &c. and was cultivated by Mr. Miller in 1731[2].

24. Stem round, aſh-coloured, flexile, whence iſſue ſeveral leaves, which at firſt are very hairy, and afterwards grow to a foot in length, and an inch broad in the middle, decreaſing to both extremes; they are of a pale green colour, and have round indentures on their edges; out of theſe proceed the flowers. The fruit is ſmall and compreſſed[3]. Native of Jamaica.]

25. The branches of this ſort have the joints much longer, narrower and more compreſſed than in any of the others. The ſpines are very long, ſlender, and of a yellowiſh brown colour, coming out in cluſters all over the ſurface of the branches, croſſing each other, ſo as to render the plant dangerous to handle: for upon being touched, the ſpines quit the branches, adhere to the hand, and penetrate the ſkin, ſo as to be very troubleſome.

[Its growth is more upright and loftier than the other Opuntias; the trunk below the branches is ſo abſolutely covered with ſpines as to be inviſible, and to ſeem nothing but a congeries of theſe. Hence the gardeners have, whimſically enough, named this plant Robinſon Cruſoe's coat. The branches are remarkable neat and flatted, ſeldom ſubdividing much, but protending horizontally in a double row and in the ſame plane. The ſpines are very long and ſlender, in parcels, and have a woolly tuft at their baſe, which is moſt evident in the more tender joints. Upon the whole this ſpecies is very different from the reſt, and has more of an air of neatneſs and elegance than any of theſe ſtrange plants, notwithſtanding its roughneſs.]

It was ſent to Mr. Miller from Jamaica by Dr. Houſtoun (before 1733). He found it there in great plenty, but could never obſerve either flower or fruit upon any of the plants; nor have they produced either in England.

26. This has many ſlender branches, which trail on whatever plants grow near them. Theſe branches, as alſo the ſtem of the plant, are beſet with long whitiſh ſpines, which are produced in tufts. The leaves are roundiſh, very thick and ſucculent; and the fruit is about the ſize of a walnut, having tufts of ſmall leaves on it, and within a whitiſh mucilaginous pulp.

It grows in ſome parts of the Spaniſh Weſt Indies, whence it was brought to the Engliſh ſettlements in America, where it is called Barbadoes Gooſeberry. The Dutch have named it Blad Apple.

[Plumier made it a new genus under the name of *Pereſkia*, from Nic. Faby. Peireſk, Senator of Aix, who collected a conſiderable library and herbarium, but publiſhed nothing.

It was cultivated in *1696*, in the royal garden at Hampton-court[4].

27. Stem leafleſs, but armed with bundles of briſtle-ſhaped ſpines. Leaves on the branches wedge-ſhaped, emarginate, thick, ſucculent, alternate, with ſubſolitary, ſubulate ſpines between them. Flowers at the ends of the twigs, ſolitary, ſometimes but ſeldom two together; petals roſaceous, flat, cordate. Fruit roundiſh, ſomewhat angular, having no tufts of leaves on it, by which it is diſtinguiſhed from the foregoing, which it otherwiſe much reſembles[5].]

[1] Hort. kew. [2] Ibid. [3] Sloane. [4] Hort. kew. [5] Plumier.

PROPAGATION AND CULTURE.

I. *Melon Thiſtles.*

1. The firſt ſort produces quantities of fruit annually; and as the ſeeds grow very readily, it is now very common in thoſe gardens where there are ſtoves to keep them; for if the fruit is permitted to drop upon the earth of the pots, and that is not diſturbed, there will plenty of plants come up without any farther trouble; and theſe ſeedling plants may be taken up as ſoon as they are of a proper ſize to remove, and planted ſix or ſeven of them into a ſmall halfpenny pot, where they may ſtand one year; by which time they will be large enough to be each planted into a ſeparate pot, and afterward they will make great progreſs, eſpecially if they are plunged into a hot-bed of tanners bark in ſummer; for although this ſort is much more hardy than the large kind, and may be preſerved in a moderate ſtove, yet the plants will not make near the progreſs as thoſe which are kept in a greater degree of heat. This ſort will continue many years with proper care, and the plants will grow to be a foot high or more; but when they are ſo tall, the lower part of them is not ſo ſightly, their green being decayed, and the ſpines changed to a dark dirty colour, they appear as if dead, ſo that the upper part of theſe old plants only ſeem to have life; whereas the plants of the middling ſize appear healthy from top to bottom.

In the ſpring, when the fruit ſhrivels and becomes dry, the ſeeds will be ripe, and may then be rubbed out, and ſown upon the ſurface of the earth in ſmall pots, which ſhould be plunged into a hot-bed of tanners bark to bring up the plants.

In the childing variety the young offſets may be taken off, and after laying them to dry for two or three days, may be planted, and will ſucceed very well.

2. The great ſort may be propagated by ſeeds, but as the plants which are raiſed from ſeeds in England, will be ſome years in arriving to any conſiderable ſize, it will be much the beſt way to procure ſome plants from the Weſt Indies; and if the plants arrive here in any of the ſummer months, ſo as that there may be time for them to get new root before the cold comes on in autumn, the plants will more certainly ſucceed. When the plants come over, it will be proper to take them out of the earth as ſoon as poſſible, and lay them in the ſtove upon the ſhelves, to dry for a fortnight or three weeks; and when they are planted, they ſhould be plunged into a good warm bed of tanners bark, to promote their making new roots. In this bed they may remain till the beginning of *October*, when they muſt be removed into the ſtove, and treated in the manner before directed.

It has been occaſionally brought to England in great plenty; but the greateſt part of the plants has been often deſtroyed by giving them too much water ſo as to rot them. Whoever propoſes to bring them from abroad, ſhould be very careful to take up their roots as entire as poſſible, and to plant them in tubs filled with ſtones and rubbiſh, mixing very little earth. There ſhould be ſeveral pretty large holes bored through the bottom of the tubs, to let the moiſture paſs off; and if the plants be ſet in the tubs a month before they are put on board the ſhip, they will in that time have made new roots. This will be the moſt ſecure method to have them ſucceed; but, during their continuance in the country, they ſhould have no water given them; and after they are on board the ſhip, they muſt not have any moiſture whatever: it will be a good method to cover the plants with tarpaulins, to keep off the ſpray of the ſea in bad weather; and to expoſe them at all times to the open air when the ſea is calm. By obſerving theſe directions, the plants may be brought to England in good health, during the ſummer ſeaſon.

The plants require a very good ſtove to preſerve them through the winter in England, nor ſhould they be expoſed to the open air in ſummer; for

although they may continue fair to outward appearance, when they have been ſome time expoſed abroad, yet they will imbibe moiſture, which will cauſe them to rot ſoon after they are removed into the ſtove. And this is frequently the caſe of thoſe plants which are brought from abroad, which have a fair healthy appearance many times at their firſt arrival, but ſoon after decay, and this will happen very ſuddenly. Scarce any appearance of diſorder will be ſeen, till the whole plant is killed; which, in a few hours time, has often been the fate of thoſe plants, when they have been placed in the ſtove.

If theſe plants are plunged into a hot-bed of tanners bark in ſummer, it will greatly forward them in their growth; but when this is practiſed, there ſhould be ſcarce any water given to the plants, for the moiſture which they will imbibe from the fermentation of the tan, will be ſufficient for them, and more would cauſe them to rot. The beſt method to preſerve the large kind is, in winter, to place the pots, either upon the tops of the flues, or, at leaſt, very near them, that they may have the warmeſt place of the ſtove; and during that ſeaſon, never to give them any water; but when the ſeaſon comes for leaving out the fire in the ſtove, to remove them into a bed of tanners bark, which will ſoon ſet them in a growing ſtate, and recover their verdure. The ſoil in which theſe ſhould be planted, muſt be of a ſandy nature, and if mixed with ſome dry lime rubbiſh, it will be ſtill better. In the bottom of the pots ſhould be placed ſome ſtones, in order to drain off any moiſture which may be in the earth; for as theſe plants naturally grow upon the hot dry burning rocks which have no earth, and, were it not for theſe plants, would be abſolutely barren, we muſt imitate their natural ſoil as near as poſſible, making ſome allowance for the difference of climates.

### II. *Cereus*, or *Torch Thiſtle*.

Theſe plants are all propagated by cuttings, ſo that if you intend to increaſe the number of them, you muſt cut off the ſtems of the upright ſorts at what length you pleaſe; theſe ſhould be laid in a dry place to heal the part cut, at leaſt a fortnight or three weeks before they are planted; but if they lie a month it is much the better, and they will be in leſs danger of rotting, eſpecially thoſe ſorts which are the moſt ſucculent.

Theſe cuttings ſhould be planted in pots filled with the mixture of earth before directed, laying ſome ſtones in the bottom of the pots to drain off the moiſture; then place the pots into a gentle hot-bed of tanners bark, to facilitate their rooting, giving them once a week a gentle watering.

The beſt ſeaſon for this work is in june, or the beginning of july, that they may have time to root before winter; towards the middle of auguſt you muſt begin to give them air by degrees, to harden them againſt winter, but they ſhould not be wholly expoſed to the open air or ſun; at the end of ſeptember they muſt be removed into the ſtove, or green-houſe, where they are to abide the winter, during which ſeaſon you muſt be very careful not to let them have much water; and always obſerve to place the young plants, for the firſt winter, in a little warmer ſituation than the older plants, as being ſomewhat tenderer.

Theſe plants ſhould always have a dry ſituation in winter, for as they imbibe the greateſt part of their nouriſhment from the circumambient air, ſo if this be too replete with moiſt particles, it will occaſion their rotting; therefore they ſhould not be expoſed abroad, not even in the midſt of ſummer, unleſs they are under ſhelter: for great rains, which often happen at that ſeaſon, are very injurious to them; the upright ſorts ſhould be therefore placed ſo as to enjoy a free air in the ſummer, but at the ſame time, ſcreened from rains and great dews; it will therefore be much the better method to ſet them in an open glaſs ſtove, where the windows may be ſet open in good weather, and ſhut in cold or wet. The creeping ſorts muſt not be expoſed too much to the open air, even in the hotteſt ſeaſon, eſpecially if you deſign to have them flower, and in winter they ſhould be kept very warm, and have no water given them.

When you have once cut off the tops of any of theſe plants, in order to increaſe them, the lower parts will put forth freſh roots from their angles, which, when grown to be eight or nine inches long, may alſo be taken off to make freſh plants; and, by this means, the old plants will continually afford a ſupply, ſo that you never need cut off above one plant of a ſort, which you ſhould preſerve for a breeder.

Theſe plants being ſucculent, they will bear to be a long time out of the ground; therefore whoever has a mind to get any of them from the Weſt Indies, need give no other inſtructions to their friends, but to cut them off, and let them lie two or three days to dry; then put them up in a box with dry hay, or ſtraw, to keep them from wounding each other with their ſpines, and if they are two or three months on their paſſage, they will keep very well, provided no wet get to them.

The third ſort may be placed againſt the walls of the ſtove, into which it will inſinuate its roots, and extend itſelf to a great length; and by faſtening it to the wall in a few places, it may be led to the cieling of the houſe.

The ſixth ſort, not being ſo tender as the other upright Cereuſes, may be preſerved in a warm green-houſe, without any artificial heat; but the plants ſhould not have any water given them in winter in this ſituation; for unleſs they are placed in a ſtove, where the moiſture is ſoon evaporated, the wet will occaſion them to rot.

The great-flowering Creeping Cereus is tender, and requires a warm ſtove to proteſt it, where it may be trained againſt the wall or upon ſticks.

The ſmall ſort, with pink-coloured flowers, is not ſo tender, and may be preſerved in a good green-houſe, or placed under a hot-bed frame in winter: in ſummer it ſhould be expoſed to the open air, to prevent the ſhoots from drawing weak, and to occaſion a number of flowers to be produced: during this time it ſhould have little water, and if the ſeaſon ſhould prove wet, the plants ſhould be ſcreened from it, that they may not run the hazard of rotting during the winter.

All theſe plants growing in dry rocky places, where their roots are confined, muſt not be planted in large pots, or in a rich ſoil. The beſt compoſt for them is one-third light earth from a common, one-third ſea ſand, and one-third ſifted lime rubbiſh: if theſe be well mixed together, and often turned over before the plants are put into it, they will thrive the better.

### III. *Opuntias* or *Indian Figs*.

All theſe ſorts (except the eighteenth) are too tender to thrive in the open air in England; nor can many of them be preſerved through the winter here, unleſs they have artificial heat; for when they are placed in a green-houſe, they turn to a pale yellow colour, their branches ſhrink, and frequently rot on the firſt approach of warm weather in the ſpring.

Theſe plants may be all propagated by cutting off their branches at the joints, during any of the ſummer months; theſe ſhould be laid in a warm dry place for a fortnight, that the wounded part may be healed over, otherwiſe they will rot with the moiſture which they imbibe at that part, as is the caſe with moſt other ſucculent plants. The ſoil in which theſe plants muſt be planted, ſhould be compoſed after the following manner, *viz.* one-third of light freſh earth from a paſture, a third part ſea ſand, and the other part ſhould be one-half rotten tan, and the other half lime rubbiſh; theſe ſhould be well mixed, and laid in a heap three or four months before it is uſed, obſerving to turn it over at leaſt once a month, that the ſeveral parts may be well united;

then you ſhould paſs it through a rough ſereen, in order to ſeparate the largeſt ſtones and clods, but by no means ſift it too fine, which is a very common fault; then you ſhould reſerve ſome of the ſmaller ſtones and rubbiſh to lay at the bottom of the pots, in order to keep an open paſſage for the moiſture to drain off; which is what muſt be obſerved for all ſucculent plants, for if the moiſture be detained in the pots, it will rot their roots and deſtroy the plants.

When you plant any of the branches of theſe plants (except the eighteenth ſort) you ſhould plunge the pots into a moderate hot-bed, which will greatly facilitate their taking root; you ſhould alſo refreſh them now and then with a little water, but be very careful not to let them have too much, or be too often watered, eſpecially before they are rooted. When the plants begin to ſhoot, you muſt give them a large ſhare of air, by raiſing the glaſſes, otherwiſe their ſhoots will draw up ſo weak, as not to be able to ſupport themſelves; and after they have taken ſtrong root, you ſhould inure them to the air by degrees, and then remove them into the ſtove where they ſhould remain, placing them near the glaſſes, which ſhould always be opened in warm weather; ſo that they may have the advantage of a free air, and yet be protected from wet and cold.

During the ſummer ſeaſon theſe plants will require to be often refreſhed with water, but it muſt not be given to them in large quantities leſt it rot them, and in winter this ſhould be proportioned to the warmth of the ſtove; for if the air be kept very warm they will require to be often refreſhed, otherwiſe their branches will ſhrink; but if the houſe be kept in a moderate degree of warmth, they ſhould have but little, for moiſture at that ſeaſon will rot them very ſoon. The heat in which theſe plants thrive beſt, is the temperate point, as marked on botanical thermometers, for if they are kept too warm in winter, it cauſes their ſhoots to be very tender, weak, and unſightly. Thoſe ſorts which are inclinable to grow upright, ſhould have their branches ſupported with ſtakes, otherwiſe their weight is ſo great, that it will break them down.

Theſe plants are by moſt people expoſed to the open air in the ſummer ſeaſon, but they thrive much better if they are continued in the ſtoves, provided the glaſſes be kept open, ſo that they may have free air; for when they are ſet abroad, the great rains which generally fall in ſummer, together with the unſettled temperature of the air in our climate, greatly diminiſh their beauty, by retarding their growth; and ſometimes in wet ſummers they are ſo replete with moiſture, as to rot in the ſucceeding winter; nor will thoſe plants which are ſet abroad (I mean the tender ſorts) produce their flowers and fruit in ſuch plenty, as thoſe which are conſtantly preſerved in the houſe.

26. The Pereſkia, or Barbados Gooſeberry, may alſo be propagated by cuttings, planted during any of the ſummer months, in pots filled with freſh light earth, and plunged into a moderate hot-bed of tanners bark, obſerving to ſhade them from the ſun in the heat of the day, and to refreſh them every third or fourth day with water. In about two months the cuttings will have made good roots, when they ſhould be carefully taken out of the pots, and each planted into a ſeparate pot filled with freſh earth, and then plunged into the hot-bed again, where they may remain during the ſummer ſeaſon; but at michaelmas, when the nights begin to be cold, they ſhould be removed into the ſtove, and plunged into the bark-bed. During the winter ſeaſon the plants muſt be kept warm, and watered twice a week; but in cold weather it ſhould not be given in large quantities. In ſummer they muſt have a great ſhare of air, and muſt be more plentifully watered, but they ſhould remain conſtantly in the ſtove; for though they will bear the open air in ſummer in a warm ſituation, yet they will make no progreſs if they are placed abroad; nor do they thrive ſo well in the dry ſtove, as when they are plunged in the tan; ſo that the beſt way is to ſet them next a trellis, at the back of the tan-bed, to which their branches may be faſtened, to prevent their trailing on other plants.

CADELI. See *Achyranthes*.

CADELIUM. See *Phaſeolus*.

CADEL-AVANACU. See *Croton*.

CADIA. (*From the Arabic Kadi.*)

*Forſk. Ægypt. arab.* 90. *Piccin.* 9. *Hort. kew.* 3. 492.

Claſſ. 10. 1. Decandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-cornered, five-cleft.

COR. *Petals* five, equal, obcordate.

STAM. *Filaments* ten, filiform, equal, the length of the petals or nearly ſo, protuberant at the baſe. *Anthers* oblong, rather ſharp at the top, placed obliquely at the ends of the filaments.

PIST. *Germ* linear. *Style* bowed. *Stigma* acute.

PER. *Legume* linear, compreſſed, bent at the end, membranaceous, many-ſeeded.

SEEDS oblong, ſmooth.

ESSENTIAL CHARACTER.

*Cal.* five-cleft. *Pet.* five, equal, obcordate. *Legume* many-ſeeded.

SPECIES.

1. Cadia purpurea. *Purple-flowered Cadia.*
*Ait. hort. kew.* 3. 492. *Forſk. fl. ægypt.* 90.
Panciatica purpurea. *Piccinoli hort. panciat.* 9. with a coloured figure.

DESCRIPTION, &c.

This is a ſhrub riſing to the height of near three feet. The branches and petioles are pubeſcent. The leaves are pinnate, coming out alternately and frequently in pairs; leaflets from fifteen to thirty pairs, linear, retuſe, the nerve commonly ending in a little point. The corolla is roſe-coloured, or rather the colour of a peach bloſſom. Legume ſomewhat leſs than a ſpan in length, containing eight or ten ſeeds*.

Forſkal obſerves, that the flowers hang down; that the corolla has ſometimes ſix or ſeven petals, and that in ſuch caſes there are more ſtamens, frequently twelve or fourteen; and that there is no gland to the anthers.

It is a native of Arabia. James Bruce, Eſq. left ſome of the ſeeds at Florence in 1773, and there it was raiſed and flowered in the neighbouring garden of Marcheſe Niccolo Panciatichi. The gardener named it *Panciatica* from Cardinal Bandino Panciatichi; probably not knowing that it had the name of *Cadia* before in Forſkal's work. It was introduced here two years after by Mr. Bruce; but has not yet flowered in England.

CÆNOPTERIS. (*From καινος, new, and πτερις, fern.*)

*Berg. in act. petrop.* 1782. *p.* 248. *Smith, ic. ined.* 2. 50. *Lin. gen. Schreb. n.* 1634. Darea. *Juſſ.* 15.

Claſſ. 24. 1. Cryptogamia Filices.

GENERIC CHARACTER.

*Fructifications* in ſubmarginal lateral lines, covered with a membrane gaping on the outſide.

SPECIES.

1. Cænopteris rhizophylla.
*Smith ic. ined.* 2. 50.
*Frond bipinnate rooting at the tip; pinnules obovate, ſomewhat ſickle-ſhaped petioled; primordial leaves lobed.*

DESCRIPTION, &c.

Stipe round, brown. Common peduncle or rachis round, brown, ſmooth; elongated at the tip, leafleſs, bulbiferous, rooting; partial peduncles green, flatted, ſometimes winged: pinnules alternate, on ſhort petioles, obovate, one-nerved; fructifying ſlightly ſickle-ſhaped, often toothed at the tip, even; the upper ones uſually confluent; all duſky green. Fructifications in ſhort, ſolitary, lateral lines, beginning at the nerve towards the baſe of the pinnules, and covered with an entire, ſcarioſe, brown membrane, opening always on the outſide, at length

* Piccinoli.

turned

turned back and permanent. When the capſules have emerged from the fructifying chink, numerous forked brown gloſſy threads ſtand out, which are the expanded rings of the capſules.

Native of the iſland of Dominica, where it was found by Thierry.

Aſplenium cicutarium *Swartz prodr.* is of this genus[b]. As is alſo Trichomanes japonicum *Thunb. jap.* 310.[c]

CÆSALPINIA. (*So named by Plumier, in honour of Andreas Cæſalpinus, chief phyſician to Pope Clement VIII.; the father of ſyſtematic arrangement in plants, in his now very ſcarce work, entitled,* De Plantis, libri ſedecim. Flor. 1583. qū. *He died at Rome in* 1602.)

*Lin. gen. n.* 516. *Reich.* 559. *Schreb.* 703. *Swartz obſ.* 165. *Plum. gen.* 28. *t.* 9. *Juſſ.* 349. *Gærtn. t.* 144. Poinciana edit. *Lin. Reich. Schreb. Tournef.* 391. *Mill. dict. &c.*

Claſſ. 10. 1. Decandria Monogynia.

Nat. order of *Lomentaceæ. Leguminoſæ* Juſſ. *&c.*

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted. *Tube* ſhort. *Segments* oblong, deciduous, the loweſt longer than the reſt, ſlightly arched.

COR. *Petals* five, inſerted into the throat of the calycine tube, unequal. *Lamina* roundiſh.

STAM. *Filaments* ten, inſerted into the throat of the calyx, filiform, woolly at the baſe, declining. *Anthers* oblong, decumbent.

PIST. *Germ* ſuperior, linear-oblong, compreſſed, attenuated at the baſe. *Style* filiform, the length of the ſtamens. *Stigma* blunt.

PER. *Legume* oblong, compreſſed, one-celled.

SEEDS few, ſubovate, compreſſed, flat.

OBS. Poinciana *is ſo nearly allied to* Cæſalpinia, *that they may very reaſonably be united under one genus.* Swartz.

ESSENTIAL CHARACTER.

*Cal.* five-parted; the loweſt ſegment longer and ſlightly arched. *Stam.* woolly at the baſe. *Pet.* five. *Legume* compreſſed.

SPECIES.

1. Cæſalpinia elata.
*Swartz obſ.* 166.
Poinciana elata. *Lin. ſpec.* 544. *Reich.* 2. 258. *Forſk. ægypt.* 86.
*Unarmed; leaflets linear, blunt with a point; corymbs compound; calyxes coriaceous tomentoſe; petals fringed; ſtamens very long.*

2. Cæſalpinia pulcherrima.
*Swartz obſ.* 166.]
Poinciana pulcherrima. *Lin. ſpec.* 544. *Reich.* 2. 258. *hort. cliff.* 158. 2. *upſ.* 101. *fl. zeyl. n.* 159. *Mill. dict.* [*Jacqu. amer.* 122. *pict.* 62. *t.* 120. *Gærtn. fruct.* 2. 322. *Brown. jam.* 225. *Sloan. jam.* 2. 49. *n.* 24. (Sena). *Burm. zeyl.* 79. *Breyn. cent.* 61. *t.* 22. *Raii hiſt.* 981. *Merian ſur. t.* 45. *Rheed. mal.* 6. *t.* 1. *Rumph. amb.* 4. *t.* 20. (Criſta pavonis).
*Prickly; leaflets oblong-oval emarginate, they and the calyxes ſmooth; corymbs ſimple; petals fringed; ſtamens very long.*

3. Cæſalpinia Sappan. *Narrow-leaved prickly Braſiletto.*
*Lin. ſpec.* 545. *Reich.* 2. 259. *fl. zeyl. n.* 158. *Gærtn. fruct.* 2. 301. *Lour. cochinch.* 262.
Ligno braſiliano ſimile. *Bauh. pin.* 393. *Raii hiſt.* 1737.
Lignum Sappan. *Rumph. amb.* 4. 56. *t.* 21.
Tſiapangam. *Rheed. mal.* 6. 3. *t.* 2.
*Prickly; leaflets oblong-oval unequal-ſided blunt, they and the calyxes ſmooth; ſtamens longer than the corolla; uppermoſt petal ſmaller.*

4. Cæſalpinia pyramidata.]
Robinia pyramidata. *Mill. dict. n.* 7.
[*Unarmed; leaflets oval quite entire equilateral, they and the calyxes ſmooth; petals with claws roundiſh flat equalling the ſtamens.*]

5. Cæſalpinia Criſta. *Broad-leaved prickly Braſiletto.*
*Lin. ſpec.* 544. *Reich.* 2. 260. *Swartz obſ.* 167. *Plum. gen.* 28. *ic. t.* 68. *Cateſb. car.* 2. *t.* 51.
*Prickly; leaflets oval, racemes ſimple, petals ovate ſhorter than the ſmooth calyx, ſtamens longer than the calyx.*

6. Cæſalpinia braſilienſis. *Smooth Braſiletto.*
*Lin. ſpec.* 544. *Reich.* 2. 259. *fyſt. ed.* 12. 259. 1. *mat. med.* 205. 112. *Swartz obſ.* 166. *Brown. jam.* 227. 1. *Sloan. jam.* 2. 184. *Raii dendr.* 132.
*Unarmed, leaflets ovate-oblong, midrib pubeſcent, calyxes tomentoſe, ſtamens ſhorter than the corolla.*

[7. Cæſalpinia bijuga. *Broad-leaved prickly Braſiletto. Swartz obſ.* 166.
C. veſicaria. *Lin. ſpec.* 545. *Reich.* 2. 259. *Gærtn. fruct.* 2. 302. *Brown. jam.* 227. 2.
Poinciana bijuga. *Lin. ſpec.* 544. *Reich.* 2. 258. *fyſt. ed.* 14. 395. *Jacqu. amer.* 123. *n.* 2.
Senna ſpuria, &c. *Sloan. jam.* 2. 50. *t.* 181, *f.* 2, 3. *good. Raii dendr.* 111.
*Prickly; leaves doubly pinnate with two pairs of obcordate leaflets, they and the calyxes ſmooth; ſtamens equalling the corolla.*

8. Cæſalpinia coriaria.
Poinciana coriaria. *Jacqu. amer.* 123. *t.* 175. *f.* 36. *Breyn. cent.* 56. *f.* 5.
*Unarmed; leaflets linear, racemes in form of ſpikes, calyxes ſmooth equalling the corolla, ſtamens longer than the corolla, legumes curved inwards.*

DESCRIPTIONS, *&c.*

1. This is a tree with bipinnate leaves of ſeven pairs; the leaflets fifteen pairs, quite entire, minute. Flowers large, yellow. Filaments very dark purple, villoſe at the baſe[a]. Native of India. Introduced in 1788, by Sir Joſeph Banks, Bart.[a]

2. The Barbadoes Flower-fence riſes with a ſtraight ſtalk ten or twelve feet high; it is covered with a ſmooth gray bark, and is ſometimes as thick as the ſmall of a man's leg; it divides into ſeveral ſpreading branches at the top, armed at each joint with two ſhort ſtrong crooked ſpines. Leaves doubly pinnate; leaflets from four to eight pairs, moſt in the middle, decreaſing in number both at top and bottom, three quarters of an inch long, almoſt half an inch broad at the end, leſſening gradually to the baſe, light green, when bruiſed emitting a ſtrong odour like Savin. The branches are terminated by looſe ſpikes of flowers, which are ſometimes formed into a kind of pyramid, and at others they are diſpoſed more in form of an umbel. The peduncle of each flower is near three inches long. The petals are roundiſh at the top, but are contracted to narrow tails or claws at their baſe; they ſpread open and are beautifully variegated with a deep red or orange colour, yellow, and ſome ſpots of green; they have a very agreeable odour. The ſtyle and ſtamens are above three inches long. The legume is about the ſame length, broad and flat, divided into three or four or more cells by tranſverſe partitions, in each of which is one flattiſh irregular ſeed. [Linneus obſerves, that the common petiole of the leaf has one gland at the baſe, and another at the upper pair; and that the partial petiole has two dagger points above the baſe.]

This beautiful plant is a native of both Indies. It is planted in hedges to divide the lands in Barbadoes, whence it has the name of Flower-fence; it is alſo called Spaniſh Carnations in ſome of our iſlands in the Weſt Indies. [Sir Hans Sloane calls it alſo Wild Sena, and Dr. Patrick Brown Barbadoes Pride: the French name it Poinciade or Fleurs de Paradis.]

Ligon ſays, the ſeeds were firſt carried to Barbadoes from the Cape de Verd iſlands. It is certain however, ſays Mr. Miller, that Dr. Houſtoun found it at Jamaica, in woods at a great diſtance from any ſettlements: he alſo found it at La Vera Cruz and Campeachy. [Jacquin informs us that it is common in the Caribbee iſlands. Browne is of opinion

[b] Smith. [c] Tranſ. Linn. 2. 341.

[a] Linn. and Forſk. [a] Hort. kew.

that

what it is not indigenous in Jamaica, but was carried there from ſome of the other colonies.]

There are varieties in the colour of the corolla, ſome having been found with a red, and others with a yellow flower, in the Spaniſh Weſt Indies, by Dr. Houſtoun.

[All parts of the plant are thought to be very powerful emmenagogues, and are frequently uſed for that purpoſe amorg the negroes[f]. It was cultivated in 1691, in the botanic garden at Chelſea[g].

3. This grows to a tall tree of a middling ſize, with many ſhort recurved ſcattered prickles on it, and with long aſcending boughs. Leaves alternate, unequally bipinnate, conſiſting of twelve pairs of ſmall emarginate ſeſſile leaflets, obliquely truncate at the baſe. Flowers yellow, ſweet-ſcented, in looſe terminating racemes. The lower diviſion of the calyx keeled, longer and narrower than the others. Petals ſpreading, concave, roundiſh, with claws; the loweſt radiate with red lines. Legume ſomewhat woody, ovate-rhomboidal, beaked, brown, ſmooth. Seeds three or four, large, turbinate or ovate-oblong, horny, ſmooth, teſtaceous[h].

The heart of the wood is red, heavy and very hard; it dyes a beautiful red, but is ſaid not to ſtand. Its medical qualities are ſuppoſed to be the ſame with thoſe of the foregoing ſpecies. Being very durable in ſea water, it is excellent for trenails in ſhip-building.

Native of the Eaſt Indies, where it is alſo much cultivated; and of the mountains of Cochinchina, whence it is exported abundantly by the Chineſe[i]. Introduced in 1773, by Sir Joſeph Banks, Bart.[k].]

4. This riſes with a ſtrong woody ſtem near thirty feet high, ſending out many ſpreading branches, which are covered with a light gray bark ſpotted with white. Leaves bipinnate, with ſeſſile leaflets, of a lucid green on their upper ſurface, but a pale green on their under. The flowers are produced in long looſe upright pyramidal bunches towards the ends of the branches, thoſe on the lower part of the bunch having long peduncles, which diminiſh gradually to the top. The flowers are of a ſcarlet colour, and make a fine appearance.

It was diſcovered by Plumier in ſome of the French ſettlements in the Weſt Indies; and was afterwards found by Dr. Houſtoun at Campeachy.

5. This ſends out many weak irregular branches, armed with ſhort ſtrong upright thorns. The leaves branch out in the ſame manner as in the following ſpecies, but the leaflets are oval and entire. The flowers are produced in long ſpikes, as in that, but they are variegated with red, and have only five ſtamens. [In Plumier's figure indeed there are only five or ſix ſtamens repreſented; but in Catesby's the flowers have ten. The branches are ſlender and full of ſmall prickles. The leaflets are very broad at the end and emarginate. The flowers are white. The pods incloſe ſeveral ſmall round ſeeds.

The value of this wood has occaſioned a ſcarcity of it on the Bahama iſlands, the largeſt trees being cut down: the biggeſt of thoſe remaining do not exceed two or three inches in thickneſs, and eight or nine feet in height. Great quantities of the wood are ſent yearly from the Weſt Indies to England for dying[l].]

6. This has very ſlender branches, which are armed with recurved thorns. The leaves branch out into many diviſions: the leaflets are oval, indented at top and oppoſite. Peduncles from the ſide of the branches, terminated by a looſe pyramidal ſpike of white flowers. [Though Miller has ſeparated theſe two ſpecies, yet he ſeems to have confounded them in the deſcriptions. No author has deſcribed the latter.]

This is the tree which affords the Braſiletto wood, much uſed in dyeing. [It is an excellent timber wood, but ſeldom exceeds eight or ten inches in diameter. It is claſtic, tough and durable, and bears a fine poliſh; it is of a beautiful orange colour, full of reſin, and yields a fine full tincture by infuſion; but it is ſeldom cut for the dyer's uſe in Jamaica[m]. Sloane on the contrary aſſerts, that it is cut there and ſent into England for dyer's uſe in great plenty every year. It was cultivated by Mr. Miller, in 1739[n].

7. Height fifteen feet. Trunk ſomewhat crooked, the thickneſs of a man's thigh, covered with a whitiſh gray bark almoſt ſmooth. Branches crooked, prickly. Leaves at unequal diſtances; the midrib four or five inches long, dividing into as many pairs of petioles, on each of which are two pairs of ſmooth, ſhining leaflets, half an inch in diameter. Flowers in ſeveral ſpikes three inches long, at the tops of the branches. Corolla deep yellow[o]. Legume corky, ſtuffed, ovate-oblong, with an obſolete tumid groove near the periphery parallel to both ſutures, thence declining towards the margin and compreſſed into an edge, but turgid in the middle, flattiſh, ſomewhat toroſe, two-celled, valveleſs. Seeds irregularly round, lenticular, thick, of a duſky ruſt colour[p].

Browne aſſigns only eight or ten feet for the height, whilſt Jacquin gives it twenty-five. The former adds, that the wood is of a brown colour; the foliage of a dark gloomy green; the flowers of a fine yellow, the lower ſegment of the calyx not fringed, nor any of the petals variegated. According to the latter, the bark is blackiſh; the prickles ſubulate, ſtout, acuminate, axillary, ſolitary, half an inch in length, but often wanting; the leaflets emarginate, frequently diſform; the flowers without ſcent.

All parts of this tree, if bruiſed, have a very ſtrong balſamic ſmell[q].

Native of Jamaica, Curacoa, &c. Introduced in 1770[r].

8. This is an elegant tree with a fine branching head, fifteen feet in height, totally void of thorns or prickles. The bark is very dark-coloured and ſpotted. Leaves doubly pinnate, and numerous at the extremities of the twigs; common pinna an inch and half, partial an inch in length, ſix pairs with an odd one; leaflets about twelve pairs without an odd one, oblong blunt ſmooth quite entire. The common peduncles form a cloſe ſpike, and come out at the ends of the twigs; the partial ones are very ſhort, one-flowered, and numerous. The flowers are ſmall, yellowiſh, and have but little ſmell. The Spaniards and natives uſe the ripe pods for tanning leather, and call them *Libidibi*.

Native of Curacao and Carthagena, in the ſalt marſhes[s].]

PROPAGATION AND CULTURE.

Theſe plants are propagated by ſeeds, which ſhould be ſown in ſmall pots filled with light rich earth early in the ſpring, and plunged into a hot-bed of tanners bark, obſerving to ſhade them from the ſun, and to water the earth as often as it appears dry: if the nights ſhould prove cold, the glaſſes muſt be covered with mats, to keep the bed in a moderate warmth. In about ſix weeks the plants will begin to appear, when they muſt be carefully cleared from weeds, and frequently refreſhed with water: in warm weather the glaſſes ſhould be raiſed in the middle of the day to admit freſh air, which will greatly ſtrengthen the plants; otherwiſe they are apt to draw up weak. When the plants are about three inches high, they ſhould be carefully taken out of the pots, and each tranſplanted into a ſeparate ſmall pot filled with freſh light earth, and plunged into the hot-bed again, obſerving to water them and ſcreen them from the heat of the ſun until they have taken new root; after which time, the glaſſes ſhould be raiſed every day in proportion to the warmth of the weather. In this hot-bed the plants may remain till autumn, when they ſhould be removed into the ſtove, and plunged into the bark-bed, where they may have room to grow. Here they ſhould remain; and being placed among other

[f] Browne. [g] Hort. kew. [h] Linn. Loureiro, Gærtner. [i] Loureiro. [k] Hort. kew. [l] Catesby.

[m] Browne. [n] Hort. kew. [o] Sloane. [p] Gærtner. [q] Sloane. [r] Hort. kew. [s] Jacquin.

tender exotics of the ſame climate, will afford an agreeable variety.

2. With reſpect to the Flower-fence, if care be taken to water and ſhift the plants as often as it is neceſſary, they will grow three feet high the firſt ſeaſon. When they are grown large, there muſt be great care taken when they are ſhifted into larger pots, not to ſuffer the ball of earth to fall from their roots; for when this happens, the plants ſeldom ſurvive it. They are very impatient of moiſture in winter, and if damp ſeizes their top, it very often kills them, or at leaſt occaſions the loſs of their heads. With proper management they will grow much taller here than they uſually do in Barbadoes, but their ſtems will not be larger than a man's finger, which is occaſioned by their being drawn up by the glaſſes of the ſtove. The beautiful flowers of this ſhrub appear in december here; but in the Weſt Indies it flowers twice a year.

[CÆSALPINIA. See *Guilandina Bonduc.*

CÆSALPINOIDES. See *Gledifſchia.*

CAJAN. See *Cytiſus.*

CAJATUS. See *Æſchynomene.*

CAIDBEIA. See *Forſkoblea.*

CAINITO. See *Chryſophyllum.*

CAKILE. See *Bunias.*

CALABA. See *Calophyllum.*

CALABASH. See *Cucurbita.*

CALABASH-TREE. See *Creſcentia.*

CALABURA. See *Muntingia.*

CALADIUM. See *Arum.*

CALAF. See *Salix.*

CALAMAGROSTIS. See *Arundo.*

CALAMARIA. See *Iſoetes.*

CALAMINT and CALAMINTHA. See *Cunila, Meliſſa, Mentha, Glechoma.*]

[CALAMUS. (Κάλαμος, παρὰ τὸ καλῶς ἀμᾶσθαι; *or from* קל, *light*; *or from* קבל, *excidere*; *or from Calamus, the ſon of Mæander, changed into a reed.*)

*Lin. gen.* 436. *Reich.* 470. *Schreb.* 589. *Juſſ.* 37. *Gærtn. t.* 139.

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Tripetaloideæ. Palmæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* ſix-leaved, permanent: the three outer *leaflets* ſhorter, broader; the three inner longer, narrower, acuminate.

COR. none, unleſs you call the calyx ſo.

STAM. *Filaments* ſix, capillary, longer than the calyx. *Anthers* round.

PIST. *Germ* roundiſh, ſuperior. *Style* trifid, columnar, ſpiral, filiform. *Stigmas* ſimple.

PER. membranous, globular, covered with ſcales imbricated backwards and obtuſe: it is once-celled, at firſt pulpy, but afterwards drieſcles.

SEED one, globular, fleſhy.

ESSENTIAL CHARACTER.

*Cal.* ſix-leaved. *Cor.* none. *Berry* dried, one-ſeeded, imbricate backwards.

SPECIES.

1. Calamus Rotang. *Rattan.*
   *Lin. ſpec.* 463. *Suſd.* 340. *Reich.* 2. 93. *fl. zeyl.* 468. *Burm. zeyl.* 36. *Pluyck. alm.* 1. 276.
   Arundo Rotang. *Piſ. mant.* 188. *fig. Pluk. alm.* 53. *t.* 106. *f.* 1, 2. *Raii hiſt.* 1316. *n.* 4.
   Tsjeru-Tsjurel. *Rheed. mal.* 12. 121. *t.* 64, 65.
   *a.* Palmijuncus Calapparius. *Rumph. amb.* 5. 97. *t.* 51.
   C. petræus. *Lour. cochinch.* 209. 1.
   β. P. niger. *Rumph.* 101. *t.* 52.
   γ. P. albus. *Rumph.* 102. *t.* 53.
   C. rudentum. *Lour. cochinch.* 209. 2.
   δ. P. verus *Rumph.* 103. *t.* 54. & *t.* 55. *f.* 1.
   C. verus. *Lour. cochinch.* 210. 3.
   ε. P. viminalis. *Rumph.* 108. *t.* 55. *f.* 2.
   ζ. P. equeſtris. *Rumph.* 110. *t.* 56. & *t.* 57. *f.* 1.
   C. dioicus. *Lour. cochinch.* 211. 6.
   η. P. Zalacca. *Rumph.* 113. *t.* 57. *f.* 2. *Gærtn. fruct.* 2. 267.
   θ. P. Draco. *Rumph.* 114. *t.* 58. *f.* 1.

DESCRIPTION, *&c.*

All the ſorts or varieties of *Calamus Rotang* or Rattan have a ſtem which is perennial, quite ſimple or unbranched, long, round, unarmed or without prickles, ſolid, jointed, procumbent when unſupported, ſcandent when near trees, but without any tendrils. Fronds large, alternate, reclining, with ſpiny ſheaths covering the joints: the ſtipes are alſo ſpiny. Leaves alternate, ſublanceolate, quite entire, ſcarcely a foot long, often three-nerved, with a few, long, hardiſh hairs. Flowers commonly hermaphrodite, almoſt terminating: on one ſpadix or more, branched large, differently ſhaped in the ſeveral ſpecies or varieties: with ſpathes either common or partial; ſometimes, but ſeldom, theſe are wanting. The pericarp a Berry, which is dry, roundiſh, ſmall, ſuperior, imbricate backwards with ſeveral roundiſh, regular, cloſe, coriaceous ſcales. It always contains one ſeed only *. According to others, it has ſometimes, though ſeldom, two or three ſeeds. Gærtner aſſigns three ſeeds to the Zalacca. Some aſſert that all the flowers are hermaphrodite, which is not probable.

The Rattan ſeems to form the connecting link between the palms and the gramineous plants, having the flower of the former, but the habit of the latter. The palm called *Raphis* has the embryo placed in the ſame manner, namely in a lateral cavity of the horny albumen; in the fruit and ſpadix it agrees nearly with this in form, only they are much larger: the flowers are but little different, only they are monoecious, as the flowers of the Rattan probably are. In another palm called *Borbe*, Aublet deſcribes the fruit to be teſſellated and ſcaly: as Rumphius does that of the *Sagu* palm. They both therefore ſeem to be allied to the Calamus ▸.

Loureiro has diſcriminated ſix ſpecies of Calamus, which he thus characterizes and deſcribes.

1. Calamus petræus. *Stone Rattan.*
   *With a very thick grooved ſtem, ſhort joints, and long ſtraight ſpines.*
   The ſtem of this is a hundred feet long, as thick as the human arm; the internodes (vulgarly called the joints) are only about a foot in length, cylindrical, grooved, ſpotted, unequal; the fronds armed cloſely with ſpines; the ſpadix terminating and very long; the berry ſubovate and acuminate. It is uſed for large ſpears and halberts.

2. Calamus rudentum. *Cable Rattan.*
   *With a very long ereſt ſtem, and inverted ſpines.*
   Stem five hundred feet long and more, an inch thick, very tough, pale aſh-coloured, not gloſſy; internodes a foot and half long, round, almoſt equal; fronds ſhorter; ſpines bent back; ſpadixes nearly terminating, looſe, wide; flowers regular; berry ſmall. The uſe of it is for cables of ſhips, and for ropes to draw great weights and to tame and faſten wild elephants.

3. Calamus ſcipionum. *Walking-cane Rattan.*
   *With very long, ſubulate, gloſſy internodes.*
   Stem thick, of a middling length, very gloſſy, reddiſh often ſpotted with black; internodes three feet long, unequal; fronds ſpiny, ſhorter; ſpadix thick, branched; branches ſhort, with few flowers. This grows abundantly on both ſides of the ſtraits of Malacca, whence it is exported into China and Europe. Piſo has figured it in p. 188. of his Mantiſſa.

4. Calamus verus. *Genuine Rattan.*
   *Fronds very long, with long crooked ſpines; ſpathe ſhort; corolla three-petalled.*
   Stem a hundred feet long, yellowiſh brown, equal, very flexile, the thickneſs of a finger; internodes long, round, almoſt equal; fronds very long, with ſtraight ſpines, and ovate-lanceolate, three-nerved, alternate leaflets; ſpadix racemed; ſpathe oblong, prickly; calyx three-parted; petals white, ſharp, ſpreading, longer than the calyx; berry rather large, brown.

* Loureiro. ▸ Juſſieu gen.

Of the ſtem cut into thongs the largeſt cables are made in India; beſides all ſorts of ropes for faſtening the planks of the country veſſels and the boarding of houſes, in which no nails are uſed; and alſo for tying a variety of utenſils both domeſtic and rural.

5. Calamus amarus. *Bitter Rattan.*
*Spines crowded, ſhort; leaflets linear; ſpadixes remote; ſpathes partial.*

Stem ſixty feet long, the thickneſs of a finger, hardiſh, even, pale-coloured; with long, nearly equal, round internodes: fronds long: ſpadixes almoſt terminating, in ſpikes, many. This has a ſix-parted calyx, and no corolla. It is uſed for the ſame purpoſes as the former; but is harder and more durable.

6. Calamus dioicus. *Dioecious Rattan.*
*With a very ſlender ſtem, ſhorter fronds and ſpines, and a dioecious flower.*

Stem the thickneſs of a gooſe-quill, twenty feet long, very regular and flexile, pale and gloſſy; internodes a foot long; male and female flowers on ſeparate plants; calyx three-toothed very ſmall; corolla three-petalled, petals ovate-lanceolate, ſtreaked, white. *Palmijuncus equeſtris* and *vaminalis* of Rumphius agree in ſome meaſure, but not entirely with this; which is uſed for weaving and faſtening ſmaller and nicer utenſils.

All theſe are ſpecifically different, for they grow wild in places very remote from each other, where they regularly preſerve their peculiar habit and differences. Many others grow in Cochinchina, the ſtraits of Malacca, and other places, which on a more accurate examination may be found to be different both from theſe and each other. They were named *Palmijunci* by Rumphius, from their ſimilitude to the Palms in the fructification, and their flexibility, like the *Juncs* or Ruſhes[c].

Gaertner deſcribes the Zalacca as having all the flowers hermaphrodite; no common ſpathe, but wandering partial ſpathes; a branched ſpadix; and the pericarp a largiſh turbinate berry, irregularly angular from the preſſure of the neighbouring berries, of a bay-rufeſcent colour; rind thin, papery, covered with cartilaginous ſcales, the uppermoſt upright and linear, but all the reſt preſſed cloſe, imbricate downwards, ſubcordate, with a raiſed line along the middle, and a little reflex at the tip, ſo that the berry is rough to the touch: the inſide is pulpy, but the pulp gradually dries up. Seeds three, fixed without any receptacle to the bottom of the berry; two of them are commonly abortive; they are almoſt globular, convex on one ſide and angular on the other, with a ſmall, umbilical, fungous, thick, ſubcordate lobe appended to them below; they have three coverings, the outer pulpy but drying up, the middle cruſtaceous, very thin, putting forth a fibulate, horny proceſs within the vertical canal of the albumen, the inner membranaceous, yellow-rufeſcent, cloſely adhering; albumen coriaceous-cartilaginous, perforated at top with a funnel-ſhaped canal from the vertex to the middle, and having an oblong conical cavity below for the reception of the embryo, which is one-lobed, fubulate, milky, and placed at the baſe of the ſeed[d].

The Rattan grows abundantly in the Eaſt Indies, by the ſides of rivers. Its extreme toughneſs and pliability render it of conſiderable uſe to the inhabitants, for withs and almoſt all the purpoſes to which we apply ropes, than which it is ſaid to be more durable in ſalt water: they alſo wattle their houſes with it, and make baſkets and all kinds of wicker work. It is imported into Europe, where it is uſed for a variety of ſmall uſes; ſuch as the bottoms of chairs, riding and walking canes, women's hoop-petticoats, *&c. &c.*

The Zalacca or Salack is cultivated for the fruit, which is about the ſize of a walnut, and covered with ſcales, like thoſe of a lizard; below the ſcales, are two or three yellow kernels, in flavour ſomewhat reſembling a ſtrawberry.

The laſt variety is ſuppoſed to yield the Dragon's-blood.

CALAMUS AROMATICUS. See *Acorus*.

CALAMUS ODORATUS. See *Andropogon*.

CALAPPA. See *Cocos*.

CALATHIAN VIOLET. See *Gratiola Pneumonanthe*.]

[CALCEOLARIA. (*From Calceolus, a little ſlipper.*)
*Lin. gen. Reich.* 32. *Schreb.* 39. *Juſſ.* 120. *Gaertn. t.* 63. *Feuill. peruv.* 3. *p.* 13.
Claſſ. 2. 1. Diandria Monogynia.
Nat. order of *Corydales*, *Scrophulariae* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, four-parted, ſpreading, equal: diviſions ovate, permanent.
COR. monopetalous, bilabiate: lower lip reſupine: *upper* very ſmall, contracted-globular, bind anteriorly — *lower* very large, ſlipper-form, inflated, gaping anteriorly.
STAM. *Filaments* two, very ſhort, within the upper lip. *Anthers* incumbent, club-form, with the handle prominent through the chink.
PIST. *Germ* roundiſh. *Style* very ſhort. *Stigma* bluntiſh.
PER. *Capſule* ſubconic, acuminate, two-furrowed, two-celled, two-valved.
SEEDS numerous, ovate.

ESSENTIAL CHARACTER.

*Cor.* ringent, inflated. *Capſ.* two-celled, two-valved. *Cal.* four-parted, equal.

SPECIES.

1. Calceolaria pinnata. *Pinnated Slipperwort.*
*Lin. ſyſt.* 65. *Reichb.* 49. *mant.* 171. *Act. ſtockh.* 1770. 286. *t.* 8. *Feuill. peruv.* 3. 12. *t.* 7. *Curt. mag. t.* 41. *Gaertn. fruct.* 1. 296.
*Leaves pinnate.*
2. Calceolaria integrifolia. *Whole-leaved Slipper-wort.*
*Lin. ſyſt. ed.* 13. *p.* 61. *Reichb.* 49. *Feuill. peruv.* 13. *t.* 7. *Smith, ic. 1. p.* 3.
*Leaves lanceolate wrinkled ſerrate, flowers panicled terminating.*
3. Calceolaria perfoliata. *Perfoliate Slipper-wort.*
*Lin. ſyſt.* 65. *ſuppl.* 86. *Muſif. amer.* 1. *t.* 3. *Smith, ic. 1. p.* 4.
*Leaves perfoliate, ſagittate, villoſe on both ſides.*
4. Calceolaria nana. *Dwarf Slipper-wort.*
*Smith, ic. ined. t.* 1.
C. uniflora. *Lamarck.* excyd.
*Scapes one-flowered, leaves ovate quite entire.*
5. Calceolaria plantaginea. *Plantain-leaved Slipper-wort.*
*Smith, ic. ined. t.* 2.
C. biflora. *Lamarck.* excyd.
*Scapes two-flowered, leaves doubly ſerrate.*
6. Calceolaria ovata.
*Smith, ic. ined. t.* 3.
C. dichotoma. *Lamarck.* excyd.
*Stem branching, leaves ovate roundiſh.*
7. Calceolaria Pothergillia. *Spatula-leaved Slipper-wort.*
*Act. horti kew.* 1. 304. *t.* 1.
*Leaves ſpatulate quite entire, peduncles ſcarce form one-flowered.*

DESCRIPTIONS, *&c.*

1. *Root* annual. *Stem* erect, two feet high, round, brachiate, briſtle, with a very thick down, and from fifteen to twenty joints. Baſe of the ſtem muricated with rooting tubercles. Branches axillary, oppoſite, brachiate like the ſtem, and ſhorter than it. *Leaves* oppoſite, without ſtipules, briſtle, ſoft, ſpreading, longer than the internodes; the upper ſurface pubeſcent with a ſcraceous, pellucid, dewy down, the lower naked with ſubviſcid atoms: leaflets ſeven to eleven, ſubalternate or oppoſite, ſerrate, pinnatifid, (the upper once bipinnate) blunt, ſeſſile, ſeparated by a broader purple limb. *Petioles* round, flat at top; at the baſe uniting on both ſides, and more pubeſcent. *Flowers* from each top and ſtalk double: the proper peduncles filiform. Corollas yellow: upper-lip ſubglobular, inflated, emar-

ginate

[c] Fl. cochinch. p. 209—211.
[d] De fruct. & ſemin. vol. 2. p. 267.

ginate in front with a cleft for the prominent anthers; lower alſo ſubglobular, the edge contracted in front, wholly inflected, ſubemarginate at top[a]. Capſule thin, from a ſwelling baſe, diminiſhing to a pyramidal top, deeply two-furrowed, two-celled, two valved, the valves when ripe biſid at the top: partition contrary to the valves. Receptacle fungous, tranſverſely oblong, with the extremities bent down, faſtened on both ſides to the partition by its proper peduncle, but looſe in other parts. Seeds very ſmall, almoſt cylindric, marked with from five to ſeven crenulate ſtreaks[b].

Native of Peru, in moiſt places. Introduced in 1773, by Sir Joſeph Banks, Bart. It flowers from july to october[c].

2. This is not C. integrifolia of the Supplement; but reſts entirely on the authority of Feuillée, by whom it was obſerved in Chili[d].

3. This is a very ſingular plant and very handſome, the whole of it is villoſe except the corolla. *Stem* round, from a foot to two feet in height, leafy, terminated by a many-flowered leafy corymb. *Leaves* connate-perfoliate, with netted veins, very thickly woolly beneath, very broad at the baſe, contracted towards the middle, then widening into a very large deltoid lobe, irregularly toothletted, a little revolute. *Flowers* in bundles at the tops of the branches. *Bractes* very like the leaves, but ovate, ſeſſile, and not perfoliate. *Peduncles* filiform, ſimple or branched. Segments of the *calyx* almoſt equal, ſharp. *Corolla* yellow, large. *Anthers* two-lobed, large, the lobes bent down. *Germ* ſubconical: *ſtyle* filiform: *ſtigma* acute. Found in New Granada, by Mutis[e].

4. *Stem* none. *Leaves* radical, many, bluntiſh, almoſt without veins, viewed with a glaſs ſlightly pubeſcent, on ſhort petioles. *Scapes* ſeveral, two inches high, upright, round, rugged-papilloſe. *Flowers* large, ſpecious, yellow ſpotted with red. *Calyx* pubeſcent, with equal diviſions bent in at the edge. *Corolla* upper lip very ſhort, vaulted; lower elongated pendulous ſwelling, edge membranous folded back angular. It reſembles *C. Forſtrygillii*; but differs in having the leaves ovate, nerveleſs and almoſt naked, not ſpatulate-many-nerved and villoſe at the tip as that is.

Straits of Magellan: found there by Commerſon.

5. *Root* perennial fibrous. *Stem* none. *Leaves* many nervous ſmooth, the edges hairy, the hairs jointed like thoſe of *Conferva*; petiolea dilated with membranes. *Scapes* a few elongated erect, two-flowered, more pubeſcent towards the top. *Calyx* pubeſcent viſcid. *Corolla* yellow.—Found by Commerſon in the Straits of Magellan.

6. *Root* annual fibrous. *Stem* erect, round, hairy. *Leaves* oppoſite on ſhort petioles, with white pellucid hairs and undernearth paler. *Peduncles* axillary twin filiform pubeſcent one-flowered. *Corolla* like that of the firſt ſpecies, ſmall and yellow: diviſions of the calyx thinner, rhomboid veined hairy. *Capſule* bluntiſh two-valved, opening at the top with biſid valves. Found in Peru by Dombey. It flowered in the royal garden at Paris in 1781. It may perhaps be the ſame with the *integrifolia* of the Supplement: but the *integrifolia*, *Syſt. edit.* 13. is certainly a different plant from both[f].

7. Stem ſcarcely an inch high, ſubdivided near the root. Leaves oppoſite, petioled, obtuſe, hairy above, ſcarcely an inch long. Pedunckes terminating, ſolitary or in pairs, round, twice as long as the leaves. Segments of the calyx acute, bent in at the end, hairy on the outſide, three lines in length. Upper lip of the corolla roundiſh-kidney-form, erect, vaulted, yellow, a little ſhorter than the calyx; lower lip deſcending, four times as long as the upper, dilated in front, inflated, underneath pale yellow, above at the ſides red, in front yellow with red ſpots, near the palate yellow: aperture large, open, four-cornered-ovate. Filaments inſerted into the ſides of the corolla at the baſe of the aperture, ſubulate. Anthers roundiſh, large. Style thick, the length of the ſtamens. Stigma thickened, flat.—Biennial. Flowering from may to auguſt. Native of Falkland iſlands. Introduced in 1777, by John Fothergill, M. D.[g]

PROPAGATION AND CULTURE.

The firſt, which is the only ſpecies, except the laſt, yet cultivated among us, may eaſily be raiſed from ſeed, ſown on a gentle hot bed in the ſpring. The ſeedlings, when of a proper ſize, are to be tranſplanted into the borders of the flower-garden, where they will flower, ripen and ſcatter their ſeeds; but being a ſmall delicate plant, the beauties of which require a cloſe inſpection, it appears to moſt advantage in a tan-flove, where, if it will grow from cuttings, it may be had in flower all the year through, by planting them in ſucceſſion[h].

CALCEOLARIA. See *Viola*.

CALCEOLUS. See *Acaulium*, *Cypripedium*, and *Kempferia*.

CALCITRAPA. See *Centaurea*, and *Valeriana*.

CALCITRAPOIDES. See *Centaurea*.

CALEA.

*Linn. gen.* n. 941. *Reich.* 1021. *Schreb.* 1277. *Gærtn.* t. 174. *Juſſ.* 185.

Claſſ. 19. 1. Syngeneſia Polygamia Æqualis.

Nat. order of *Compoſitæ Oppoſitifoliæ. Corymbiferæ* Juſſ.

GENERIC CHARACTER.

Cal. *Common* imbricate *ſcales* oblong, looſiſh.

Cor. *Compound* uniform. *Corollules* hermaphrodite, very many, equal. *Proper* funnel-form, with a five-cleft border.

Stam. *Filaments* five, capillary, very ſhort. *Anthers* cylindric, tubular.

Pist. *Germ* oblongiſh. *Style* filiform, the length of the corollule. *Stigmas* two, recurved, acute.

Per. none. *Calyx* unchanged.

Seeds ſolitary, oblong. *Down* hairy, the length of the calyx.

Rec. chaffy. *Chaff* a little longer than the calyx, eminent between the floſcules.

ESSENTIAL CHARACTER.

*Cal.* imbricate. *Down* hairy or none. *Receptacle* chaffy.

SPECIES.

1. Calea jamaicenſis.

*Linn. ſpec.* 1179. *Reich.* 3. 728. *amæn.* 5. 404. *Swartz obſ.* 302.

Santolina foliis ſubulatis, &c. *Brown. jam.* 315. 3.

Conyza fruticoſa, &c. *Sloan. jam.* 1. 257. *t.* 151. *f.* 3.

*Flowers ſolitary pedunckd, leaves ovate-oblong, ſubſeſſile petioled.*

2. Calea oppoſitifolia.

*Linn. ſpec.* 1179. *Reich.* 3. 728. *amæn.* 5. 404. *Swartz obſ.* 302.

Santolina Houſt. MSS. *Brown. jam.* 315. 2.

Achillea jam. bi oppoſitifolia. *Petiv. Sloan. jam.* 1. 256.

*Corymbi heaped, pedunckd very long, leaves lanceolate, ſome bipinnated.*

3. Calea Achillæa.

*Linn. ſpec.* 1179. *Reich.* 3. 728. *amæn.* 5. 404.

Achillea ramoſa, &c. *Brown. jam.* 317.

Santolina frondens amer. lauri foliis, floribus racemoſis. *Houſt. MS.* 8. 8.

*Flowers ſub-panicled, calyxes ſhort, ſeeds naked, leaves ovate-lanceolate petioled.*

4. Calea lobata.

*Swartz prodr.* 113. *Hort. kew.* 3. 164. *Gærtn. ſemd.* 2. 408.

Conyza lobata. *Lin. ſpec.* 1207. *Reich.* 3. 773. *hort. elth.* 403. *Mill. dict.* n. 4. *Plum. ſpec.* 9. *t.* 96. *Sloan. jam.* 1. 260. *t.* 152. *f.* 4. (Virga aurea).

Santolina. *Brown. jam.* 314. 2.

*Corymbs heaped, leaves alternate, the upper ones ovate-lanceolate, the lower ones tooth-baſtate finnate-ſerrate.*

[a] Linn. mant. [b] Gærtn. [c] Hort. kew. [d] Swith, ic.
[e] Ibid. [f] Ibid. [g] Hort. kew. [h] Curtis.

5. Calea ſcoparia.
*Lin. ſyſt.* 740. *Reich.* 3. 729. *Swartz obſ.* 302. Sergilus ſcoparius. *Gærtn. fruct.* 2. 409. *t.* 174. Chryſocoma ſcoparia. *Lin. amæn.* 5. 404. *Brown. jam.* 316. *t.* 34. *f.* 4.
*Stem ſuffruticoſe, branches almoſt oppoſite angular.*

6. Calea leptophylla.
*Forſt. ſ. auſtral. n.* 287.
*Flowers terminating in threes and fives heaped, leaves oblong imbricate quite entire ſeſſile, ſtem ſhrubby.*

7. Calea pinifolia.
*Forſt. ſ. auſtral. n.* 288.
*Peduncles terminating heaped, leaves linear acerоſe, ſtem ſhrubby.*

DESCRIPTIONS, *&c.*

1. Height ſix or ſeven feet and more[a]. Stems ſhrubby, narrow, round, obſcurely tomentoſe. Leaves hairy, rugged, three-nerved. Flowers terminating, frequently three together; the pedicels of the ſame length with the flowers. Calyx coloured. It is of the ſtature of *Chryſocoma*, but has coloured chaffs the length of the calyx[b]. The pappus or down is rugged and as long as the flower[c]. Native of Jamaica, chiefly in the woods and inland parts of the iſland[d].

2. Stem herbaceous, two feet high, branched, upright, round, pubeſcent. Branches oppoſite, long, ſpreading, ſtiff, hoary with down. Leaves ſubſeſſile, oppoſite, ſlightly toothed; the upper ones entire, ſharp, nerved, pubeſcent, ſoft. Petioles broadiſh, very ſhort, or none. The ſtem at top is, as it were, trichotomous, with three long, terminating peduncles, at the end of which are three ſubſeſſile, conical, white flowers. The corollules are very ſmall. Seeds oblong compreſſed, with three or four very minute awns. Chaffs lanceolate, the inner ones longer than the outer. Native of Jamaica, in the hedges on the mountains[e]. Cultivated by Mr. Miller, in 1768.]

3. This has woody branches, which ſpread over the neighbouring plants, and riſe eight or ten feet high. [Browne ſays, that it riſes generally to the height of two or three feet only; and, according to Linneus, it has the ſtature of *Eupatorium*.] The leaves are thick and oppoſite. There are many ſide branches on which are ſmaller leaves, oppoſite like the others, and terminated by panicles of yellow flowers. [Calyx only half the length of the corolla, and ſomewhat imbricate. Chaffs the length of the flower. Seeds four-cornered, without down[f]. Native of Jamaica. Cultivated by Mr. Miller, in 1768.

4. This plant generally riſes to the height of four or five feet, according to Browne. Sir Hans Sloane ſays, that it has a very ſtrong, ſtreated, green ſtalk, an inch thick, as high, or higher than a man; having along the ſtalk ſeveral leaves, larger than thoſe on its branches, which are four inches long, and one inch broad in the middle where broadeſt, rough, ſinuated about the edges, and of a dark green colour. Towards the top of the ſtalk are many branches and twigs, every one of which ſuſtains many naked yellow flowers. Native of Jamaica.

From the ſhape of the leaves Browne calls it *Halbert-weed*. He affirms, that it is an excellent bitter, and much uſed in America; where a ſpirituous infuſion of the tops is generally kept in moſt plantations, and is often adminiſtered as an active warm ſtomachic.

Introduced before 1733, by William Houſtoun, M. D.

5. This is a ſhrub or ſmall tree. Stem the height of a man or more, branched towards the top, even, ſtreaked, wrinkled, with an aſh-coloured bark. Twigs abundant, four-ſided, ſubdivided, ſtiff, almoſt naked, ſtreaked, ſmooth, ſilvery aſh-coloured. Leaves ſeſſile, minute, alternate, oblong, ſmooth. The branches are ſometimes terminating and leafleſs. Flowers ſolitary, leafleſs, ſeſſile, ſmall, white: ſcales of the calyx very many, minute, whitiſh. Corollules twenty to thirty. Stamens above the corolla. Style undivided: ſtigma blunt. Receptacle naked. The outer ſtamens ſeem to be barren[g].

It is a native of Jamaica; and there found only in the coldeſt parts of the mountains. It reſembles our European Broom, and is thence called *Mountain Broom Tree*. It is the only tree of the ſame appearance in that country[h].

Gærtner, who has made a diſtinct genus for this plant, obſerves, that it differs from *Calea* both in receptacle and down; from *Chryſocoma* in the latter only; and conſequently that it is allied more nearly to this than to the former. He adds, that the leaves ſeem ſometimes to be oppoſite; but that they are very minute and remote.

6, 7. Theſe are natives of New Zealand.

The five firſt ſpecies being all natives of Jamaica, the trivial name of the firſt muſt needs be a bad one.

Gærtner remarks, that the firſt and fourth ſpecies only correſpond with the Linnean generic character of *Calea*, and therefore the other ſpecies ought to be removed to other genera, unleſs we prefer the leaves and external appearance of plants to marks taken from the fructification[i].]

PROPAGATION AND CULTURE.

Theſe plants may be propagated by ſeeds, ſown upon a hot-bed the beginning of april. When they come up, they ſhould be tenderly treated whilſt young; admitting however freſh air to them daily in proportion to the warmth of the ſeaſon; giving them water frequently, but ſparingly. When they have ſtrength enough to be removed, they muſt be each tranſplanted into a ſeparate ſmall pot, filled with light ſandy earth, and plunged into a hot-bed; obſerving to ſhade them until they have taken new root; giving them air, and watering them frequently but gently, as before. When the plants are grown ſtrong, they muſt be removed into larger pots, and placed in the ſtove or glaſs-caſe, giving them plenty of freſh air in warm weather. With which management, they will ſometimes ripen their ſeeds in favourable ſeaſons.

CALENDULA. (*Diminu. from Caltha, whence Calthula, Caldula, Calendula, and Calendula. See Caltha.*) *Lin. gen. n.* 990. *Reich.* 1073. *Schreb.* 1339. *Rait meth.* 36. *Gærtn. t.* 168. *Juſſ.* 183. Caltha. *Tournef.* 284. *Vaill. act. gall.* 1720. 27. Dimorphotheca. *ejuſd. f.* 22, 21. Cardiſpermum. *Trant. act. gall.* 1724. *f.* 2.
Eng. *Marigold.* Fr. *Souci.*
Claſſ. 19. 4. Syngeneſia Polygamia Neceſſaria.
Nat. order of *Compoſitæ Diſcoideæ, Corymbiferæ* Juſſ.

GENERIC CHARACTER.

CAL. *Common* ſimple, many-leaved, almoſt upright; *ſegments* linear-lanceolate, (fourteen to twenty) nearly equal.

COR. *Compound* radiate: *corollules* hermaphrodite, very many, in the diſk. *Females* the number of rays in the calyx, very long, in the ray.
*Proper*, of the hermaphrodite tubular, ſemiquinquefid, the length of the calyx—of the female, ligulate, very long, three-toothed, villoſe at the baſe, nerveleſs.

STAM. (Hermaphrodite.) *Filaments* five, capillary, very ſhort. *Antlers* cylindric, tubular, the length of the corollule.

PIST. Hermaphrodite. *Germ* oblong: *ſtyle* filiform, ſcarcely the length of the ſtamens: *ſtigma* obtuſe, bifid, ſtraight.—Females. *Germ* oblong, three-cornered: *ſtyle* filiform, the length of the ſtamens: *ſtigmas* two, oblong, acuminate, reflex.

PER. none. *Calyx* converging, roundiſh, depreſſed.

SEEDS Hermaphrodite central of the diſk none: of the circumference ſeldom ſolitary, membranous, obcordate, compreſſed.—Females ſolitary, larger, oblong, incurved, triangular, with membranous angles, marked on the outſide longitudinally with the figure of a vegetable. *Down* none.

[a] Browne. [b] Linn. amoen. [c] Linn. ſpec. [d] Browne. [e] Swartz. [f] Linn. amoen. [g] Swartz. [h] Browne. [i] Vol. 2. p. 409.

Rec.

Rec. naked, flat.

Obs. *In the* Caltha *of Vaill. the feeds of the females are furnished with a membranous inflected wing on each side.*

*In the* Dimorphotheca *V. the feeds of the females have not these wings.*

SPECIES.

1. Calendula arvenſis. *Field Marigold.*
*Lin. ſpec.* 1303. *Reich.* 3. 923. *ſuec.* 777. *Pollich pal. n.* 829. *Hall. helv. n.* 94. *Berg. phyt.* 2. 137. *Gærtn. fruct.* 2. 421. *Krock. ſilef. n.* 1469. *Villars dauph.* 3. 197.
Caltha officinalis. *Scop. carn. n.* 1030.
C. arvenſis. *Bauh. pin.* 276. *Raii hiſt.* 338. *Ger.* 603. *f.* 10. *Mor. hiſt.* 3. *ſ.* 6. *t.* 4. *f.* 6. *Tabern.* 335.
C. minima. *Bauh. hiſt.* 3. 103.
*Seeds boat-form muricated bent-in; the outmoſt erect, protended.*

2. Calendula ſancta. *Paleſtine Marigold.*
*Lin. ſpec.* 1304. *Reich.* 3. 924.
*Seeds pitcher-form obovate even, calyxes ſubmuricated.*

3. Calendula officinalis. *Garden Marigold.*
*Lin. ſpec.* 1304. *Reich.* 3. 924. *mat. med.* 193. *hort. cliff.* 425. 1. *upſ.* 274. 1. *Gærtn. fruct.* 2. 422. *Blackw. t.* 106. *Mill. illuſtr. fig. Berg. phyt.* 2. 139. *Krock. ſilef. n.* 1470.
C. ſativa. *Raii hiſt.* 337. *Ger.* 599. *f.* 1–8. *emac.* 739. *Park. theat.* 1369. *par.* 296.
Caltha vulgaris. *Bauh. pin.* 275. *Mor. ſ.* 1–5. *Bauh. hiſt.* 3. 101. *f.* 1, 2, & 102. *f.* 1.
β. C. polyanthos major. *Bauh. pin.* 275.
γ. C. flor. reflexis. *Bauh. pin.* 276.
δ. C. prolifera, majoribus floribus. *Bauh. pin.* 276.
*Seeds all boat-form muricated bent in.*

4. Calendula pluvialis. *Small Cape Marigold.*
*Lin. ſpec.* 1304. *Reich.* 3. 924. *hort. cliff.* 425. 2. *upſ.* 274. 2. *Mill. fig. t.* 75. *f.* 1. *Gærtn. fruct.* 2. 422.
C. ſcabra. *Berg. cap.* 310.
C. humilis africana, fl. intus albo, foris violaceo ſimplici. *Herm. lugdb.* 104. *t.* 105. *Breyn. ic.* 26. *t.* 14. *f.* 1.
Caltha afric. fl. intus albo, foris violaceo. *Tourn. inſt.* 499.
C. afr. fl. intus albo extus ferrugineo. *Mor. hiſt.* 3. 14. *ſ.* 6. *t.* 3. *f.* 8.
*Leaves lanceolate ſinuate-toothletted, ſtem leafy, pedunculs filiform.*

5. Calendula hybrida. *Hybridous* or *great Cape Marigold.*
*Lin. ſpec.* 1304. *Reich.* 3. 925. *hort. upſ.* 274. 3. *Mill. fig. t.* 75. *f.* 2. *Gærtn. fruct.* 2. 422.
Caltha africana, fl. intus albo, foris violaceo, ſem. majore oblongo. *Breyn. ic.* 26. *t.* 14. *f.* 2.
Cardiſpermum afr. pubeſcens, fol. inciſis, parvo flore. *Act. par.* 1724. 39. *t.* 2.
*Leaves lanceolate toothed, ſtem leafy, pedunculs thickened at top.*

6. Calendula nudicaulis. *Naked-ſtalked Cape Marigold.*
*Lin. ſpec.* 1305. *ſyſt.* 791. *Reich.* 3. 925. *mant.* 479. *Berg. cap.* 312. *Herm. afr.* 5.
Bellis afr. florum pediculis pene aphyllis, fol. inciſis. *Comm. hort.* 2. 66. *t.* 33.
Caltha afr., fl. intus albo extus leviter violaceo, ſem. plano cordato. *Boerh. lugdb.* 1. 113.
*Leaves lanceolate ſinuate-toothed, ſtem almoſt naked.*

7. Calendula graminifolia. *Graſs-leaved Marigold.*
*Lin. ſpec.* 1305. *Reich.* 3. 925. *Berg. cap.* 311. *Herm. afr.* 5. *Mill. fig. t.* 76. *f.* 1. *Pluk. mant.* 35. *t.* 376. *f.* 7. & 383. *f.* 4.
Caltha afr., fol. croci anguſtis, florum petalis extrorſum purpuraſcentibus interne albis. *Boerh. lugdb.* 1. 113.
Dimorphotheca ſtatices fol. *Act. par.* 1720. *p.* 280.
Bellis afr., fl. pediculis foliofis, fol. anguſtis & integris. *Comm. hort.* 2. 67. *t.* 34.
*Leaves linear almoſt entire; ſtems almoſt naked one-flowered: ſeeds obcordate-orbiculate even.*

8. Calendula fruticoſa. *Shrubby Marigold.*
*Lin. ſpec.* 1305. *Reich.* 3. 926. *amæn.* 6. *afr. n.* 83. *Berg. cap.* 314. *Mill. fig. t.* 283.
*Leaves obovate a little toothed, ſtem ſhrubby decumbent.*

[9. Calendula tomentoſa. *Tomentoſe Marigold.*
*Lin. ſyſt.* 791. *ſuppl.* 384.
*Leaves obovate entire tomentoſe, ſcape naked, one-flowered.*

10. Calendula pumila. *Pigmy Marigold.*
*Forſt. ſtirpl. auſtr. n.* 305.
*Seeds oblong incurvated; leaves orbiculate, crenate-ſerrated, ſerratures mucronated, ſcape naked; one-flowered.*

11. Calendula ſtellata. *Starry Marigold.*
*Cavanilles ic. hiſp. n.* 5. *t.* 5.
*Five outer ſeeds boat-ſhaped ſmooth, five alternate horned pothous muricate, the reſt ſcrew-ſhaped.*

12. Calendula Tragus. *Bending-ſtalked Marigold.*
*Ait. hort. kew.* 3. 271.
*Cauleſcent; leaves alternate linear almoſt quite entire ſomewhat hairy; ſeeds ſuborbiculate.*

13. Calendula rigida. *Rough-leaved Marigold.*
*Ait. hort. kew.* 3. 271.
*Leaves elliptic toothed roughiſh; wings of the ſeeds ſemiorbiculate.*

14. Calendula oppoſitifolia. *Glaucous Marigold.*
*Ait. hort. kew* 3. 272.
*Leaves oppoſite linear quite entire ſomewhat fleſhy ſmooth.*

DESCRIPTION, &c.

The flowers are commonly ſolitary and terminating. Many of the ſpecies are herbaceous and natives of the Cape of Good Hope. The ſeventh, eighth, twelfth, thirteenth, and fourteenth ſorts are ſhrubby. The firſt and third grow wild in the ſouthern countries of Europe; the ſecond is from Paleſtine; the tenth from New Zealand.]

1. Root annual. Stalk ſlender, branching, ſpreading near the ground. Leaves narrow, ſpear-ſhaped, hairy, half ſurrounding the ſtalk at their baſe. Flowers produced at the extremity of the branches upon long naked peduncles; they are very ſmall, and of a pale yellow colour; the florets of the ray are very narrow, as are alſo the leaves of the calyx. [Seeds of different ſhapes: thoſe of the diſk ſemicircularly curved inwards, by no means boat-ſhaped or margined, but inclined to cylindric, on the belly part compreſſed into an edge, but on the back convex and muricated with little ſhort innocuous prickles; thoſe of the ray are longer, upright, crooked, attenuated upwards and lengthened out into a beak which is bilamellate and two-lobed at the end, with little prickles on the outſide, but ſmooth within, and near the baſe augmented with a lamellated proceſs[a].

Haller is of opinion that this is not ſpecifically diſtinct from the Garden Marigold; and Ray ſays, that it differs in little elſe beſides the ſmalleſs of the parts.

Native of Sweden, Germany, Switzerland, France, Carniola, Italy, and Spain. It flowers moſt part of the ſummer, and was cultivated in 1683, by Mr. James Sutherland[b].

2. This is very like the foregoing ſpecies, but the calyx is muricated on the outſide. The ſeeds are more ventricoſe, not at all muricated; without the aculeated ſeeds in the ray. The whole plant is naked without any ſhagginеſs. The leaves are rugged at the edge[c].] Mr. Miller adds, that they are much larger than thoſe of the former ſort, but yet not ſo large as thoſe of the Garden Marigold; and that the flowers are of a middle ſize between the two others, and of a very pale yellow colour. He ſays, that he gathered it in the garden at Leyden, [and therefore he probably cultivated it ſoon after the year 1727, when he was in Holland.

3. This differs from the Field Marigold not only in the ſeeds, but in having a loftier ſtem, more divaricated, pubeſcent and pale green, as are alſo the leaves; theſe are longer leſs ſinuated, the lower and middle leaves ovate and blunt, the upper ones lanceolate[d].

[a] Gærtner. [b] Hort. kew. [c] Linn. ſpec. [d] Krocker.

Native of France, in the vineyards, of Italy in the corn fields, of Silesia in orchards, gardens and fields; flowering most part of the summer. Parkinson informs us that he received the seed of the single Marigold from Spain, where it grows wild, " by Guillaume Boel, in his time a very curious, and cunning searcher of simples[e]." It was however cultivated by Gerarde in 1597[f], and probably much earlier.

The golden splendour of the flowers, says John Bauhin, the *flaventia lumina Calthæ*, as Columella expresses it, ennobled this plant, before it was known to be of any use. It has however been cultivated time out of mind in kitchen gardens for the flowers, which were dried in order to be boiled in broth: from a fancy that they are comforters of the heart and spirits. Linneus accordingly says, that they may be used in a double dose as a succedaneum to Saffron; but modern practice has little confidence in these supposed cordials.

The common or officinal Marigold is a plant which is now much out of use in the Materia Medica, and has perhaps been commended beyond its merit as an aperient and detergent in visceral obstructions, jaundice, and menstrual suppressions. It has also been considered as useful in the scrophula of children, eaten in the manner of a salad. There is a certain acrimony in the plant; insomuch that it has even been commended as an extirpator of warts. Formerly the flowers were much esteemed as preservatives against pestilential disorders, either chewed, or infused in vinegar; or the juice itself drank to the quantity of some ounces. In the plague itself it has been highly commended by some writers; and is esteemed a powerful sudorific. The leaves are supposed to be more efficacious than the flowers. It has been asserted, that a Marigold flower strongly rubbed on the affected part, is an admirable remedy for the pain and swelling caused by the sting of a wasp or bee.

According to the observation of Linneus, the flowers are open from nine in the morning to three in the afternoon. This regular expansion and closing of the flowers attracted early notice, and hence this plant acquired the name of *Solsequia* and *Solis sponsa*. There is an allusion to this property in the poems ascribed to Rowley:

" The Mary-budde that shoottethe (shutteth) with the lighte."

But more fully thus by Shakspeare—

" The Marigold, that goes to bed wi' th' sun
" And with him rises weeping,"

This plant is called in German, *gewohnliche Ringelblume, Goldblume, Dotterblume, Gilkenbutterblume, gemeine Sonnenwende, Hausſonnenwirbel, Weckbroſelchen, Todtenblume*. In Dutch *Tamme Goudbloem*. In Swedish, *Ringblomma*. In Danish, *almindelige Korblomme, Solfikke, Soelfik*. In English, *common* or *garden Marigold* or *Mary-gold*, by old authors *Golds* or *Ruddes*. *Golds* or *Gouldes* is a name among the country people not only for this, but for *Chryſanthemum ſegetum*, any sort of Hawkweed, and in short for most yellow flowers of the Syngenesia class. The fondness of the English people for tacking Christian names to animals and plants is well known: the Virgin Mary in particular has sanctified many of the latter. In French, *Souci du jardin*. In Italian, *Calendula ortenſe, ſtorrancio, fiore d'ogni meſe*. This latter name gives countenance to the derivation of *Calendula* from the *Calends*. In Spanish and Portugueze, *Calendula ortenſe*; in the latter also *Maravilha bastarda*. In Russian, *Nogotki*.]

Of the garden Marigold there are the following varieties: 1. The Single. 2. The common double-flowering. 3. The largest very double-flowering. 4. The double lemon-coloured. 5. The greater and smaller childing Marigold, [called by Gerarde fruitful or much-bearing Marigold, and by the vulgar sort of women, as he says, Jack-an-apes on horse-back. There are other trifling varieties scarcely worthy of observation.]

4. Root annual. Lower leaves deeply indented on their edges, fleshy and of a pale green colour. Stems declining, from six to eight inches long, leafy to within two inches of the top. Stem leaves much narrower and more indented than those at the root. Upper part of the stem very slender, upon which stands one flower, shaped like those of the common Marigold, having a purple bottom, with the ray of a violet colour on the outside, and of a pure white within: it opens when the sun shines, but shuts up in the evening, and remains so in cloudy weather. When the flower decays, it hangs down during the growth of the seeds; but when they are full ripe, the peduncle is raised again, so that the heads of the seeds stand upright. [The seeds of the disk are rounded cordate, flatted, surrounded with a swelling rim, and of a whitish straw-colour. The seeds of the ray are oblong, inversely pyramidal three or four-cornered, with the sides and angles tubercled and muricate[g].

It is a native of the Cape of Good Hope, flowers from june to august; and was cultivated by Mr. Miller in 1726.

*Calendula ſcabra* of Bergius is supposed to be the same with this: he however affirms that it is different both from the *pluvialis* and *hybrida* of Linneus; for the leaves in them are rather blunt, narrowing towards the base, not linear and narrowing to the point, as in this; nor are the calyxes so evidently ciliate.]

5. Root annual. Leaves much longer than in the foregoing, and broader at the end; those near the root are regularly indented, but the stem-leaves have only a few shallow indentures. The stalks are much longer and thicker than those of the enfuing sort; and at the top, just below the flower, swell larger than at the bottom. The flowers are smaller than in the fourth, but of the same colour. [The seeds of the disk are very like those of the *pluvialis*, but a little larger, elliptic-cordate, not swelling at the rim. The seeds of the ray are inversely pyramidal, three-sided, the sides a little convex and smooth, but the angles compressed and serrate-toothed[i].

The seeds of this sort were brought from the Cape to Holland about sixty years ago (1711), and thence all the curious gardens in Europe have been furnished with them[k]. Cultivated by Mr. Miller in 1756[l]; probably much sooner.]

6. This is also an annual plant, and has much the appearance of the fourth, but the leaves are more deeply indented on their edges. The stalks grow about the same length as that; the flower is a little smaller, and the rays on the outside are of a fainter purple colour. The seeds of this are flat and heart-shaped, whereas those of the fourth are long and narrow.

[The stem is extremely simple, erect, leafy at bottom. The leaves are spatulate, rugged, entire except that they are now and then angulated with a tooth. Seeds orbiculate[m].

Native of the Cape; flowers from june to august; cultivated by Mr. Miller in 1731[n].]

7. This is a perennial plant, which divides near the root into several tufted heads, closely covered with long grassy leaves coming out on every side without order; some of these have one or two indentures on their edges, but the most part are entire. From between the leaves arise naked peduncles about nine inches long, sustaining one flower at the top, which is about the size of the common Marigold, having a purple bottom; the rays are also purple without, but of a pure white within. These expand when the sun shines, but always close in the evening, and in cloudy weather. The general season of their beauty is in april and may, when they have the greatest number of flowers upon them; but

[e] Parad. p. 298. [f] Hort. kew. [g] Gærtner. [h] Hort. kew. [i] Gærtner. [k] Mill. fig. [l] Hort. kew. [m] Linn. mant. [n] Hort. kew.

there is commonly a ſucceſſion of flowers late in the autumn, though not in ſo great plenty. The ſeeds are heart-ſhaped like thoſe of the foregoing.

[They were brought from the Cape to Holland in 1698. Though it has been long in the Engliſh gardens, yet it is not ſo commonly ſeen there as it deſerves, there being few plants which continue ſo long in flower as this*.]

8. This has a ſlender, ſhrubby ſtalk, riſing to the height of ſeven or eight feet, but requiring ſupport; it ſends out a great number of weak branches from the bottom to the top, hanging downwards: the leaves are on ſhort foot-ſtalks; moſt of them are ſlightly indented towards the top, but ſome are entire; they are of a ſhining green colour on their upper ſurface, but paler underneath: the flowers come out at the ends of the branches on ſhort naked peduncles, and are in ſize and colour like thoſe of the fifth ſort: they are ſometimes ſucceeded by flat heart-ſhaped ſeeds.

It was introduced into the Dutch gardens from the Cape of Good Hope; and was ſent to Mr. Miller by Dr. Adrian van Royen about the year 1759. It flowers during the ſummer months.

[9. Found at the Cape by Thunberg†.

10. Native of New Zealand‡.

11. Root annual. Stem herbaceous, ſtreaked, much branched, rugged as is the whole plant, three feet high. Leaves ſeſſile, ovate-oblong, toothſinuate, ſubciliate, thick, bright green. Flowers terminating, ſolitary, on elongated peduncles. Common calyx deeply multifid, the ſegments ovate-lanceolate, permanent, nearly equal. Flowers yellow; as many florets in the ray as there are ſegments in the calyx, that is about ſixteen. Germ, in the ray, boat-ſhaped, rugged. Florets in the diſk few, barren: ſtigma globular, with two very ſhort diverging cuſps. Fruit, when ripe, of a ruſty red colour, conſiſting of one ſeed covered with an aril, of three different ſhapes. Seeds oblong, aſh-coloured.

Cultivated by Cavanilles in the garden of the Duke del Infantado near Madrid before 1791, and raiſed from ſeeds ſent by Lemonier. It flowers and perfects ſeeds there from june to auguſt‖.

12, 13, 14. Theſe are natives of the Cape of Good Hope; and were introduced by Mr. Francis Maſſon, in 1774¶.

Mr. Miller has two other ſorts: Calendula decumbens, n. 9. which is Melampodium americanum; and Calendula americana, n. 10. which is alſo probably a Melampodium.]

PROPAGATION AND CULTURE.

1. If the ſeeds of the Field Marigold are permitted to ſcatter, there will be a freſh ſupply of young plants; ſo that from may, when the flowers firſt appear, till the froſt puts a ſtop to them, there will be a ſucceſſion of plants in flower.

2. The ſeeds of ſingle Garden Marigolds will come up of themſelves if they are permitted to ſcatter.

3. The varieties are ſuppoſed to have been originally obtained from the ſeeds of the ſingle ſort, but moſt of theſe differences continue, if the ſeeds are properly ſaved; but the two childing Marigolds, and the largeſt double, are ſubject to degenerate, where care is not taken in ſaving their ſeeds. The beſt way to preſerve the varieties, is to pull up all thoſe plants, whoſe flowers are leſs double, as ſoon as they appear, and to ſave the ſeeds from the largeſt and moſt double flowers; the childing ſort ſhould be ſown by itſelf in a ſeparate part of the garden, and the ſeeds ſaved from the large centre flowers only, not from the ſmall ones which come from the calyx of the other, for the ſeeds of theſe are apt to change.

The ſeeds may be ſown in march or april, where the plants are to remain, and will require no other culture but to keep them clean from weeds, and to thin the plants where they are too cloſe, leaving them ten inches aſunder, that their branches may have room to ſpread. Theſe plants will begin to flower in june, and continue in flower until the froſt kills them. The ſeeds ripen in auguſt and ſeptember, which, if permitted to ſcatter, will furniſh a ſupply of young plants in the ſpring; but as theſe will be a mixture of bad and good, the beſt method is to ſave the beſt ſeeds, and ſow each of the varieties diſtinct, which is the ſure way to have them in perfection.

4, 5, 6. The ſeeds of theſe plants ſhould be ſown in the ſpring in the borders of the garden where the plants are deſigned to remain, for they do not bear tranſplanting well; therefore they may be treated in the ſame manner, and ſown at the ſame time, with Candy Tuft, Venus Looking Glaſs, and other hardy annual plants putting four or five ſeeds in each patch; if they all grow, there ſhould not be more than two plants left in each patch; after this, they require no farther care but to keep them clean from weeds. If the ſeeds of theſe plants are permitted to ſcatter, the plants will come up the following ſpring without care, and theſe will flower earlier than thoſe which are ſown in the ſpring.

7. This ſort does not often produce good ſeeds in Europe, but it is eaſily propagated by ſlips taken off from the heads, in the ſame manner as is practiſed for Thrift. They may be planted any time in ſummer, in pots filled with light freſh earth, which may be plunged into a very moderate hot-bed, to forward their putting out roots; or otherwiſe the pots may be ſunk in the ground up to their rims, and covered with a Melon-glaſs, which, in the middle of ſummer, will anſwer full as well, but in the ſpring or autumn, the former method is to be preferred: when theſe are planted, the glaſſes muſt be ſhaded in the heat of the day, and the ſlips muſt be frequently refreſhed with water, but it muſt not be given them too liberally, for much wet will rot them: after they have got ſtrong roots, they ſhould be each planted into ſeveral ſmall pots, filled with freſh light earth, and placed in a ſhady ſituation, till they have taken freſh root, when they may be placed in the open air, in a ſheltered ſituation, where they may remain till autumn, and then ſhould be placed in a dry, airy, glaſs-caſe, for the winter ſeaſon, or under a common hot-bed frame; for theſe plants do not thrive in artificial heat, they only require protection from froſt and wet, and ſhould enjoy the air at all times when the weather is mild. I have ſometimes had one or two heads of them ripen in a ſeaſon, but this is very rare; and if the ſeeds are not ſown in autum, they ſeldom grow.

8. This is eaſily propagated by cuttings, which may be planted any time in ſummer in a ſhady border, or otherwiſe ſhaded with mats in the heat of the day: in five or ſix weeks, theſe will have taken root, when they ſhould be carefully taken up, and each put into a ſeparate pot, filled with light ſandy earth, but not dunged, and placed in the ſhade till they have taken freſh root; then they may be placed with other hardy exotic plants in a ſheltered ſituation, where they may remain till the froſt begins, when they muſt be removed into the greenhouſe, placing them near the windows that they may enjoy the free air, for this plant only requires protection from froſt. The earth in which theſe are planted, ſhould be light, but very poor, for in rich earth they grow too luxuriant, and ſeldom flower.

CALF'S-SNOUT. See *Antirrhinum*.

CALINEA. See *Doliocarpus*.

CALLA. (Καλλαια, *palearia galli, the wattles of a cock.*)

*Lin. gen. n.* 1030. *Reich.* 1121. *Schreb.* 1388. *Gærtn. t.* 84. *Juſſ.* 24. Provenzalia. *Petit. gen.* 45. Anguina. *Trew.*

Claſſ. 20. 8. Gynandria Polyandria.

Nat. order of *Piperitæ*. *Aroideæ* Juſſ.

GENERIC CHARACTER.

CAL. *Spathe* one-leafed, ovate-cordate, acuminate, coloured at top, very large, ſpreading, permanent. *Spadix* finger-ſhaped, quite ſimple, erect, covered with fructifications.

COR. none.

STAM.

* Mill. dg. † Linn. ſuppl. ‡ Forſter. ‖ Cavanilles. ¶ Hort. kew.

STAM. *Filaments* ſome, intermixt with the germs, the length of the piſtils, permanent, compreſſed, truncate. *Antbers* ſimple, truncate, ſeſſile.

PIST. to each a roundiſh, obtuſe *Germ*. *Style* ſimple, very ſhort. *Stigma* acute.

PER. *Berries* as many as there are piſtils, four-cornered-globular, pulpy, one-celled, (ſeveral-celled. *G.*)

SEEDS many (ſix to twelve)—(ſolitary. *G.*) oblong, cylindric, obtuſe at both ends.

OBS. *Since in each berry there are ſeveral ſeeds, it follows that each piſtil belongs to as many floſcules, and are not parts of one and the ſame flower; ſince however a perianth and corolla are wanting to ſeparate the ſtamens, it is difficult to aſſign the exact number of theſe to each floſcule. If I were to conjecture from the analogy of the Palms, I ſhould ſuppoſe that ſix ſtamens were the appropriate number in each floſcule.*

*In* C. paluſtris *the Spadix is wholly covered with ſtamens and piſtils mixt: but in* C. æthiopica *at the bottom only, the upper part being covered with ſtamens only.*

ESSENTIAL CHARACTER.

*Spathe* flat. *Spadix* covered with floſcules. *Cal.* and *Pet.* none. *Berries* many-ſeeded.

SPECIES.

1. Calla æthiopica. *Æthiopian Calla.*
*Lin. ſpec.* 1373. *Reich.* 4. 75. *hort. cliff.* 435. *Lederm. microſc. t.* 18, 19. *Gærtn. fruct.* 2. 20.
Arum æthiop., fl. albo odorato. *Comm. hort.* 1. 95. *t.* 50.
A. amer., ari vulg. facie, fol. carnoſis. *Mich. flor.* 9. *t.* 2.
*Leaves ſagittate-cordate, ſpathe cordate, ſpadix male at top.*

2. Calla paluſtris. *Marſh Calla.*
*Lin. ſpec.* 1373. *Reich.* 4. 75. *hort. cliff.* 436. *ſuec. n.* 822. *lapp. n.* 320. *Gmel. ſib.* 1. *p.* 1. *Pollich pal. n.* 865. *Fl. dan. t.* 422. *Barr. ic.* 574.
Dracunculus paluſtris, ſ. rad. arundinacea. *Bauh. pin.* 195.
D. aquatilis. *Dod. pempt.* 331. *Raii hiſt.* 1210. *Ger.* 683. *f.* 3. *emac.* 832. *f.* 3. *Park.* 1244. *f.* 1. *Beſl. eyſt. vern.* 2. 17.
Provenzalia paluſtris. *Petit. gen.* 45.
*Leaves cordate, ſpathe flat, ſpadix hermaphrodite all over.*

3. Calla orientalis. *Oriental Calla.*
*Lin. ſpec.* 1373. *Reich.* 4. 75. *Gron. orient. n.* 282.
Arum minus orientale, rotundioribus foliis. *Mor. hiſt.* 3. 544. *Raii ſuppl.* 580.
A. Carſaami. *Rauw. itin.* 115.
*Leaves ovate.*

[4. Calla occulta.
*Lour. cochinch.* 532. *Rumph. amb. l.* 8. *c.* 8. *t.* 111. *f.* 2?
*Leaves cordate-ovate; ſpathe ſpiral; ſpadix male at top.*]

DESCRIPTIONS, *&c.*

1. This plant has thick, fleſhy, tuberous roots, which are covered with a thin brown ſkin, and ſtrike down many ſtrong fleſhy fibres into the ground. The leaves ariſe in cluſters, having foot-ſtalks more than a foot long, which are green and ſucculent. The leaves are eight or nine inches in length, and of a ſhining green, ending in a ſharp point, which turns backward; between the leaves comes out the ſcape, which is thick, ſmooth, of the ſame colour as the leaves, riſes above them, and is terminated by a ſingle flower, ſhaped like thoſe of the Arum; the hood or ſpathe is twiſted at the bottom, but ſpreads open at the top, and is of a pure white colour. In the center of this is ſituated the ſpadix or club, which is of an herbaceous yellow colour, upon which the ſmall herbaceous flowers are placed, ſo cloſely joined as that the ſtamens and piſtils are very difficult to diſtinguiſh, without the aſſiſtance of glaſſes; it is only about half the length of the ſpathe. When the flowers fade, ſome of thoſe which are at the top, are ſucceeded by roundiſh fleſhy berries, compreſſed on two ſides, each containing two or three ſeeds.

This plant grows naturally at the Cape of Good Hope, but has been long an inhabitant in the Engliſh gardens.

[Commelin ſays, that the living plant was ſent to him in 1687.—Mr. Miller cultivated it in 1731. It flowers from january to may[a].

2. Leaves erect, acuminate, ſtreaked, bright of yellowiſh green, ſmooth, four or five inches long, and three or four broad, alternately embracing the ſtem, with thick ſmooth ſucculent petioles five or ſix inches long. Scape round, thick, ſucculent, ſmooth, bright green. Two ovate bluntiſh ſtipules at the baſe of the petioles. Spathe roundiſh-ovate, rolled up at the end into a bluntiſh ſpine, yellowiſh green below, white and ſmooth above. Spadix ovate, obtuſe. Berries ſmall, many, ſeſſile on a conic bed, four or five-cornered or elſe round, wrinkled about the edge, firſt green then red, ſmooth, ſoft, flat at top, crowned with a ſhort ſtyle. Seeds ſix to nine, ſometimes only one to three, in a viſcid mucilage; ſometimes none[b].

The roots creep in the mud ſo as ſometimes to cover whole marſhes. They have a hot biting taſte, and yet bread is ſometimes made of them[c].

It flowers from june to auguſt, and is a native of Lapland, Sweden, Denmark, Ruſſia, Germany, and Holland. It was introduced in 1770, by Daniel Charles Solander, L. L. D.[d] but had been probably cultivated by Mr. Miller before.]

3. This alſo has a thick tuberous root, from which ſpring up ſeveral ovate leaves, ſtanding on pretty long foot-ſtalks: the ſcape riſes between the leaves, about ſix or eight inches high, ſupporting one white flower at the top.

Native of the mountains near Aleppo.

[This plant reſts on the authority of Rauwolf, and is omitted in all the editions of the Syſtema Vegetabilium.

4. Plant one foot high, perennial, with ſcarcely any ſtalk. Leaves many, ſmooth, diffuſed, with long channelled petioles, dilated at the baſe, embracing the inner ones. Spathe long, concealing the flowers even in their ſtate of maturity. Spadix oblong, wholly covered with flowers, below mixed, but male only at top. Filaments ſhort, ſcattered. Stigma concave, trifid, ſeſſile. Berry three-lobed, three-celled, yellow, containing many ſeeds.

Native of Cochinchina, in moiſt places[e].]

PROPAGATION AND CULTURE.

1. This propagates very faſt by offſets, which ſhould be taken off the latter end of auguſt, at which time the old leaves decay; but this plant is never deſtitute of leaves, for before the old ones decay, there are young leaves produced, which advance in height all the winter; but at this ſeaſon the roots are in their moſt inactive ſtate. Theſe roots have generally a great number of offſets about them, ſo that unleſs there is a want of them, the largeſt only ſhould be choſen; which ſhould be ſeparated from all the ſmaller, and each planted in a ſeparate pot, filled with kitchen-garden earth, and placed with other hardy exotic plants in the open air till autumn, when they muſt be removed into ſhelter for the winter ſeaſon, during which time, they muſt not have too much wet, for that will rot the roots. This plant is ſo hardy as to live in the open air in mild winters, without any cover, if it be planted in a warm border, and have a dry ſoil: but with a little ſhelter in hard froſt, it may be preſerved in the full ground very well. It flowers in may, and the ſeeds ripen in auguſt; but as the roots increaſe ſo plentifully, few perſons care to ſow the ſeeds, becauſe the young plants will not flower in leſs than three years.

[a] Hort. kew. [b] Pollich. [c] Linn. ſuec. and lapp. [d] Hort. kew. [e] Loureiro.

2. Is rarely admitted into gardens, and muſt be planted in an artificial bog, or at leaſt in the mud of a pond, or in a pot or tub ſet in water.

3. The roots of this ſort ſhould be planted in pots filled with light earth, and in ſummer they may be placed with other exotic plants in the open air; but in winter they ſhould be placed under a common hot-bed frame, to ſcreen them from froſt, to which if they are expoſed the roots will be deſtroyed; there is little beauty in this plant, ſo it is only preſerved in botanic gardens for variety.

[CALLICARPA. (Καλὸς *fructus, and* καλλὸς *pulchritudo: from the beauty of the fruit.*)

*Lin. gen. n.* 135. *Reich.* 141. *Schreb.* 175. *Gærtn. t.* 94. *Juſſ.* 107. Sphondylococcos, *Miteh.* 20. Burchardia, *Heiſteri.* Johnſonia, *Dale, Mill. dict.*

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Dumoſe. Vitices* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-form: mouth four-cleft, erect.

COR. monopetalous, tubular: *border* four-cleft, obtuſe, ſpreading.

STAM. *Filaments* four, filiform, twice the length of the corolla. *Authers* ovate, incumbent.

PIST. *Germ* roundiſh. *Style* filiform, thicker at top. *Stigma* thickiſh, obtuſe.

PER. *Berry* globular, ſmooth.

SEEDS four, oblong, ſhaped like a meniſcus, compreſſed, callous.

OBS. C. americana *has a cylindric calyx, ſcarcely four-toothed.*

ESSENTIAL CHARACTER.

*Cal.* four-cleft. *Cor.* four-cleft. *Berry* four-ſeeded.

SPECIES.

1. Callicarpa americana. *American Callicarpa.* [*

*Lin. ſpec.* 161. *Reich.* 313. *mant.* 2. 198. *Gærtn. fruct.* 2. 80. *Lour. cochinch.* 70.]

Johnſonia americana. *Mill. dict.*

Sphondylococcos. *Mitch. eph. nat. cur.* 8. 218.

Burchardia. *Dubam. arb.* 1. 111. *t.* 44. *Pluk. aim. t.* 136. *f.* 3. *Cateſb. car.* 2. *t.* 47. *Gron. virg.* 138.

*Leaves ſerrate, tomentoſe beneath.*

[2. Callicarpa tomentoſa.

*Lin. ſyſt.* 153. *Reich.* 314. *Gærtn. fruct.* 2. 81.

Tomex tomentoſa. *Lin. ſpec.* 172. *fl. zeyl.* 59. *amæn.* 1. 115. *Burm. ind.* 36.

Arbor malabarica illa dicta. *Burm. zeyl.* 26.

*Leaves quite entire woolly.*

3. Callicarpa japonica.

*Lin. ſyſt.* 153. *Thunb. jap.* 60.

*Leaves ſerrate ſmooth.*

4. Callicarpa ferruginea.

*Swartz prodr.* 31.

*Leaves broad-lanceolate ſerrate ſomewhat rugged underneath, cymes terminating and axillary.*

5. Callicarpa reticulata.

*Swartz prodr.* 31.

*Leaves elliptic-lanceolate ſubſerrate wrinkled, tomentoſe-hoary underneath.*

6. Callicarpa umbellata.

*Lour. cochinch.* 70.

*Leaves turbinate-ovate ſmooth alternate, umbels ſeſſile.*

7. Callicarpa triloba.

*Lour. cochinch.* 70.

*Stem ſcandent, leaves three-lobed, pedunules diebotomous.*

DESCRIPTIONS, *&c.*

1. A ſhrub from three or four to ſix feet in height. Branches rather compreſſed. The nerves of the upper ſurface of the leaves, and the whole under ſurface tomentoſe. The flowers in axillary, dichotomous, tomentoſe panicles, ſcarce the length of the leaves; with minute, ſubulate bractes, oppoſite at each fork. Calyx cylindric, ſcarcely four-toothed, very ſmooth. Corolla funnel-form, deep purple. Germ ſuperior. Style the ſtature of the filaments [*]. Berry the ſize of a ſmall pea, at firſt bright red, afterwards deep purple, one-celled. Seeds fixed to the bottom of the berry, bony, elliptic, convex on one ſide, ſlightly concave on the other [b].

Native of North America: alſo of Cochinchina, which ſhows the impropriety of the trivial name.]

The ſeeds were ſent to Mr. Miller by Mr. Catesby from Carolina, in 1724; many of the plants were then raiſed, flouriſhed very well in the open air, and produced flowers; but in the ſevere froſt of 1740, moſt of them were deſtroyed, as were alſo the young plants raiſed from Dr. Dale's ſeeds the year before, which were only ſheltered under a frame; ſo that until he ſent a freſh ſupply of ſeeds in 1744, there were ſcarce any plants in the Engliſh gardens: ſince that time ſeeds have been brought to England in plenty.

This plant having been ſent over by Dr. Dale, with the generic characters, under the title of *Johnſonia*, in honour of the editor of Gerarde's herbal, in the year 1739, before it was mentioned by Linnæus, Mr. Miller kept it under that name, in the laſt edition of his dictionary.

[2. A ſingular tree, and without its peer. A thick nap inveſts the branches, pedunules, petioles, like woollen cloth. Leaves ovate, the ſize of the hand, oppoſite, acuminate, coriaceous, wrinkled, naked, petioled. Pedunules axillary, ſolitary, dichotomous, the length of the petioles, divaricated. Corolla four-petalled. Filaments inſerted into the receptacle [c]. Berry the ſize of a pepper-corn, black, terminated by the ſtigma, which is pale-coloured, within the calyx, which is white with down, orbicular, ſcarcely toothed or very obſcurely four-toothed, ſpreading very wide; the berry is one-celled, and contains four bony ſeeds, convex on one ſide, on the other concave with an obſcurely elevated ridge [d].

The Indians chew the bark of this tree, when they have not the leaves of the *Betel* [e]. Native of the Eaſt-Indies.

3. Stem ſhrubby, erect, ſmooth. Branches oppoſite, round, ſmooth, purple, divaricated. Leaves oppoſite, on ſhort petioles, oblong, acuminate, entire at the baſe and point, green above, pale beneath, nerved, two inches long. Flowers above axillary, panicled, very ſmall. Panicle trichotomous, ſupradecompound, ſubfaſtigiate. Bractes linear. Pedunules half an inch long, with very ſhort pedicels. Perianth ſhorter than the corolla, which is four-parted and white. Filaments inſerted into the germ, very ſhort. Anthers oblong. Germ ſuperior. Style ſubulate, ſhorter than the corolla. Stigma ſimple, acute. Native of Japan [f].

4, 5. Natives of Jamaica [g].

6. This is a middle-ſized tree, with aſcending branches. Leaves quite entire, reflex at the edge. Flowers herbaceous, ſmall, in five-flowered umbels, almoſt at the ends of the branches: calyx bluntly four-cleft; corolla bell-ſhaped, with a ſhort tube: ſtamens and ſtigma ſeſſile. Berry fleſhy, roundiſh, ſmall, containing four ſeeds.

Native of Cochinchina, in woods.

7. This is a long branching ſhrub, climbing by bifid tendrils. Leaves cordate, ſerrate, ſmooth, on long petioles. Flowers axillary, pale. Berry roundiſh, four-ſeeded. Native both of China and Cochinchina [h].]

PROPAGATION AND CULTURE.

The firſt ſort, which is the only one yet cultivated here, riſes eaſily from ſeeds, on a moderate hot-bed. It is beſt to ſow the ſeeds in pots, and to plunge them into a tan-bed of a moderate warmth; when the plants come up, and have obtained ſome ſtrength, they ſhould be gradually inured to the open air, into which they ſhould be removed in June, and placed in a ſheltered ſituation, where they may remain till autumn: during this time they muſt be kept clear from weeds, and gently refreſhed with water in dry weather: but as theſe young plants are tender, they ſhould be placed under a frame before the early froſt comes on; for autumnal froſts will

[*] Linn. mant.

[b] Gærtner. [c] Linn. zeyl. [d] Gærtner. [e] Burman. [f] Thunberg. [g] Swartz. [h] Loureiro.

kill the tender part of their ſhoots, which often cauſes their ſtalks to decay moſt part of their length before the ſpring. During the winter ſeaſon they ſhould be ſcreened from froſt, but in mild weather they muſt enjoy the free air, otherwiſe their ſhoots will turn mouldy and decay. The following ſpring, juſt before the plants ſhoot, they ſhould be carefully turned out of the pots, ſo as not to break their roots, and part of them may be planted in ſmall pots filled with light earth, and the others in a nurſery-bed in a warm ſituation, at about four or five inches aſunder; thoſe in the pots ſhould be plunged into a moderate hot-bed, which will forward their taking root; but afterwards they muſt be hardened to bear the open air as before; theſe ſhould be ſheltered under a frame in winter for three or four years, till they have obtained ſtrength; then they may be turned out of the pots, and planted in a warm ſituation, where they will live in the open air through common winters; but in ſevere froſt they are in danger of being killed, if they are not ſheltered; therefore the ſurface of the ground about their roots ſhould be covered with old tan to keep out the froſt, and their tops protected with ſtraw, peaſhaulm, or fern.

The plants in the beds ſhould alſo be covered with mats or ſtraw, in froſty weather, and after they have obtained ſtrength, they may be tranſplanted into a warm ſituation, and treated every winter in the ſame manner as the others.

[CALLICORNIA. See *Leyſera*.

CALLIGONUM. (*From* καλλος *or* κηλος, *and* γονυ: *fine joints.*)

*Lin. gen. n.* 680. *Reich.* 735, *and p.* 570. *L'Herit. in tranſact. Linn.* 1. 179. *Juſſ.* 83. Pallaſia. *Lin. gen. Schreb. n.* 834. *Juſſ.* 83. Polygonoides. *Tournef.* 278. Pterococcus. *Pallas, it.* 2. 738. *t.* 5. *&* 3. 536.

Claſſ. 11. 4. Dodecandria Tetragynia.

Nat. order of *Holoraceæ*. *Polygoneæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, turbinate at the baſe, with a five-parted border: *parts* nearly equal, roundiſh, ſpreading, finally obſcurely turned back, permanent, the two outer a little ſmaller than the reſt.

COR. none, unleſs the calyx be taken for it.

STAM. *Filaments* about ſixteen (ten to fifteen. *S.*), diverging, capillary, at bottom thickened a little and pubeſcent, ſurrounding the germ like a nectary with their ſlightly coaleſcent baſe, withering. *Anthers* roundiſh, two-celled, peltate.

PIST. *Germ* ſuperior, ovate, four-ſided, acuminate. *Styles* three, or more frequently four, filiform, ſpreading, ſubcoaleſcent at the baſe or ending in an acumen of the germ, ſcarcely ſhorter than the filaments. *Stigmas* capitate.

PER. none, except the cruſt or ſhell of the nut.

SEED. *Nut* with a juiceleſs inſeparable cruſt or rind, oblong, four-ſided, four-winged, one-celled, valveleſs: the wings either membranaceous longitudinally two-parted toothed curled; or briſtly, the briſtles branched rigid but ſoft. Nucleus or kernel of the ſame form.

ESSENTIAL CHARACTER.

*Cal.* five-parted. *Cor.* none. *Filaments* about ſixteen, ſlightly united at the baſe. *Germ* ſuperior, four-ſided. *Nut* one-celled, with a cruſt that has ſeveral wings, or many briſtles.

SPECIES.

1. Calligonum Polygonoides.
*Lin. ſpec.* 748. *L'Herit. in Linn. tranſ.* 1. 179.
Polygonoides orientale Ephedræ facie. *Tourn. cor.* 47. *item.* 2. 356.—3. 214. *fig.*
*Fruit lattiſed, briſtles branched rigid.*

2. Calligonum comoſum.
*L'Herit. in Linn. tranſact.* 1. 180.
*Fruits lattiſed, briſtles branched ſoft.*

3. Calligonum Pallaſia.
*L'Herit. in Linn. tranſact.* 1. 180. *ſtirp. nov. tom.* 2. *Ait. hort. kew.* 2. 242.
Pallaſia caſpica. *Linn. ſuppl.* 252.
Calligonum polygonoides. *Pallas it.* 3. 536.
Pterococcus aphyllus. *Pallas it.* 2. 738. *t.* 5.
*Fruits winged, wings membranaceous curled.*

DESCRIPTION, *&c.*

1. This is a ſhrub three or four feet in height, very buſhy and extending on every ſide: the trunk crooked, hard, briſtle, the thickneſs of the human arm, covered with a ruſſet-coloured bark, divided into crooked branches, which are ſubdivided into twigs, whence inſtead of leaves ſpring cylindric threads, half a line in thickneſs, and an inch or fifteen lines in length, compoſed of ſeveral jointed pieces, ſo like the leaves of Ephedra, that it is impoſſible to diſtinguiſh them without ſeeing the flowers: from the joints of theſe threads proceed others which are jointed alſo, and along theſe ſome flowers come forth three lines in diameter, they are in form of baſins, cut into five parts to the middle, where they are pale green: the reſt is white: from the bottom of the baſin riſes an angular piſtil a line and half in length, ſurrounded with white filaments which have purple anthers: each flower is ſupported by a very ſlender and ſhort peduncle. The fruit is about half an inch long, and four lines thick, of a conical figure, deeply channelled longitudinally; the channels are ſometimes ſtraight, ſometimes ſpiral; the angles are terminated by wings cut into very fine fringes; the pulpy part is white and angular. The flowers have the odour of thoſe of the Lime tree, are long in withering, and continue at the baſe of the fruit [a].

Tournefort has deſcribed and figured a ſingle ſtyle, whereas there are three or four: he has alſo repreſented very few ſtamens, whereas there are about fifteen: the figure alſo repreſents both calyx and corolla, but there is only one. Linneus aſſigned two ſtigmas without any ſtyle to his Calligonum, and an indefinite number of ſtamens. Tournefort ſeems to have taken the young naſcent twigs for leaves [b].

Found by Tournefort in Armenia, in the plains at the foot of Mount Ararat, in the year 1700.

2. This is perhaps no more than a variety of the foregoing. The plants are in every reſpect alike, but the fruit is with ſofter briſtles; in the other they are very diſtinct and ſtiffer.

It was found in Egypt, by Lippi; and in Barbary, by Louiche Deſfontaines [c].

3. This is a ſhrub three or four feet in height, with many alternate, round, reclining, flexuoſe, jointed, ſomewhat knotty, leafleſs branches: the ſhoots at each joint are numerous (ſix to ten), much crowded in bundles, ruſhy, ſome ſimple, others branched; few of theſe become branches, but moſt of them periſh; they are ſubulate, jointed, bright green, or ſomewhat glaucous. At each joint of the ſhoots is a ſingle leaf, which is ſeſſile, cylindric, ſubulate, fleſhy, like the ſhoots, half an inch in length; theſe are placed alternately, Stipule or ſheath membranaceous, obſcurely triſid, withering, ſurrounding the joint, as in the Knot-graſs and other Polygonums. Flowers lateral or axillary, uſually three together at each joint, peduncled, white with the diſk of the calycine ſegments greeniſh, fragrant [d]. Pallas adds, that theſe flowers are very abundant from the younger woody branches, eſpecially about the warty tubercles at the joints, and from the herbaceous ſuckers which puſh up every ſpring; they come out in balls within the ſmall membranous ſtipule. It flowers at the beginning of June, and the ſeeds are ripe in July. He found it in the ſandy deſerts of Siberia, between the Volga and the Jaick. Here it flowers in auguſt, and was introduced in 1780, by Peter Simon Pallas, M. D. [e]

This learned author, not attending either to the *Polygonoides* of Tournefort, or the *Calligonum* of Linneus, propoſed this ſpecies as a new genus, under the name of *Pterococcus aphyllus*; to this miſtake he afterwards added another, in aſſerting that his *Pterococcus* was the ſame plant with the *Polygo-*

[a] Tournef. voy. de Levant. [b] L'Heritier. [c] Idem.
[d] Idem. [e] Hort. kew.

*noides*

*neides* of Tournefort. The younger Linneus named it *Pallasia caspica*, in honour of Dr. Pallas, who firſt diſcovered it.

The herb and flowers are ſo alike in the ſeveral ſpecies, that we are obliged to have recourſe to the fruit for the ſpecific diſtinctions [f].

Loureiro has given another ſpecies, under the name of *Calligonum aſperum*, which he thus characterizes: leaves ovate, rough, racemes ſubdivided, fruit double. The ſtem is ſhrubby, ſcandent but without tendrils, unarmed, long, branched. Leaves quite entire, alternate. Flowers white, in terminating racemes: calyx five-leaved, herbaceous, except at the end, where it is red; leaflets roundiſh, concave, ſpreading: corolla commonly none, but ſometimes there are four round, concave, ſpreading petals: ſtigma ſeſſile, blunt, deeply two-parted: ſtamens numerous, on the receptacle. He calls the fruit a berry, which ſometimes is ſingle, ſometimes double; is one-celled and contains many ſeeds [g]. In the fruit therefore this plant differs widely from the Calligonums. Native of Cochinchina, in woods.]

[CALLISIA.

*Loefling. Lin. gen.* 63. *Reich.* 69. *Schreb.* 87. *Juſſ.* 45. Hapalanthus. *Jacqu. amer.* 11. (Καλλος δοξος, *tender flower.*)

Claſſ. 3. 1. Triandria Monogynia.

Nat. order of *Enſatæ*. *Junci* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* three-leaved: leaflets linear-lanceolate, keeled, erect, permanent.

COR. *Petals* three, lanceolate, acuminate, erect, ſpreading at the top, the length of the calyx.

STAM. *Filaments* three, capillary, longer than the corolla, dilated at the top into a roundiſh lamina. *Anthers* double, globular, fixed to the inſide of the lamina.

PIST. *Germ* ſuperior, oblong, compreſſed. *Style* capillary, the length of the ſtamens. *Stigmas* three, ſpreading, pencil-form.

PER. *Capſule* ovate, compreſſed, acute, two-celled, two-valved; the valves contrary.

SEEDS two, roundiſh.

OBS. *Allied to* Commelina.

ESSENTIAL CHARACTER.

*Cal.* three-leaved. *Pet.* three. *Anth.* double. *Capſ.* two-celled.

SPECIES.

1. Callisia repens. *Creeping Callisia.*
*Lin. ſpec.* 62. *ſyſt.* 94. *Reich.* 116. *Loeſl. it.* 305. Hapalanthus repens. *Jacqu. amer. t.* 11. *edit.* 2. 12. *t.* 14.

DESCRIPTION, *&c.*

This plant is allied to *Commelina*, but it is deſtitute of nectaries [h].

Herbaceous, tender, creeping from the joints; rather erect at top, a little branching at the baſe, ſmooth. Leaves ovate, acuminate, ſubcordate at the baſe, quite entire, thickiſh, ſhining, fat, ſheathing, the edge purple, alternate. Flowers ſmall, tender, ſeſſile, greeniſh, generally three together from each ſheath of the lower leaves [i].

It is a native of the Weſt Indies, in low moiſt ſhady places. Here it flowers in june and july; and was introduced in 1776, by John Fothergill, M. D. [k].]

[CALLITRICHE. (Καλλος *or* καλὸς *and* θριξ; *Fine-hair.*)

*Lin. gen. n.* 13. *Reich.* 13. *Schreb.* 17. *Gærtn. t.* 68. *Juſſ.* 19. Stellaria. *Dill. gen.* 6.

Claſſ. 1. 2. Monandria Digynia.

23. 1. Polygamia Monoecia. *Hudſ.*

Nat. order of *Holoraceæ*. *Naiades* Juſſ.

GENERIC CHARACTER.

CAL. none.

COR. *Petals* two, incurved, acuminate, channelled, oppoſite. (oblong, concave, converging. *Hudſ.*)

STAM. *Filament* one, long, recurved. (ſtraight. *Hudſ.*) *Anther* ſimple.

PIST. *Germ* roundiſh. (ſuperior, compreſſed. *Hudſ.*) *Styles* two, capillary, recurved. (filiform, very long. *Hudſ.*) *Stigmas* acute.

PER. *Capſule* roundiſh, quadrangular, compreſſed, two-celled. (four-celled. *Rai.* obcordate, four-valved. *Hudſ.* none. *G.*)

SEEDS ſolitary, oblong. (four, naked. *G.*)

OBS. *C. verna is monoecious.*

Flowers male, female, and hermaphrodite. *Hudſ.*

ESSENTIAL CHARACTER.

*Cal.* none. *Pet.* two. *Capſ.* two-celled, four-ſeeded.

SPECIES.

1. Callitriche verna. *Vernal Starwort*, or *ſtar-headed water Chickweed.*
*Lin. ſpec.* 6. *Reich.* 10. *ſuec. n.* 3. *Hudſ. angl.* 439. *With.* 4. *Relh. n.* 2. *Gærtn. fruct. t.* 330. *Thunb. jap.* 16. *Pollich pal. n.* 2. *Neck. gallob.* 3. *Gmel. ſib.* 3. 13. *n.* 4. *Oed. dan. t.* 129. *Krock. ſilef. n.* 3. *Villars dauph.* 2. 2.
C. fontana. *Scop. carn. n.* 1201.
Stellaria. *Raii ſyn.* 289. aquatica. *Lob. ic.* 792. 1. *Bauh. pin.* 141. *Dill. giſſ.* 58. *t.* 6. *Ger. emac.* 830. 3. *Park.* 1258. 10. *Petiv.* 6. 3. *Raii hiſt.* 1323.—fol. imis linearibus, ſup. ſubrotundis. *Hall. helv. n.* 554.
Coriſpermum fol. oppoſitis. *Lin. lapp.* 2. *Gron. virg.* 3.
*Upper leaves oval; flowers androgynous.*

β. Callitriche Plinii. *Col. ecphr.* 1. 315. *t.* 316.
Stellaria fol. petiolatis ſubrotundis. *Hall. helv. n.* 553.
S. minor & repens. *Raii ſyn.* 289. *Dill. giſſ.* 120.
Lenticula paluſtris bifolia, fructu tetragono. *Bauh. pin.* 262.
*All the leaves oval; flowers androgynous.*

2. Callitriche autumnalis. *Autumnal Starwort.*
*Lin. ſpec.* 6. *ſyſt.* 53. *Reich.* 10. *ſuec.* 4. *Hudſ. angl.* 440. 7. *With.* 5. *Relh. n.* 3. *Pollich pal. n.* 3. *Neck. gallob.* 3. *Gmel. ſib.* 3. 13. *n.* 5. *t.* 1. *f.* 2. (bad). *Krock. ſilef. n.* 4. *Villars dauph.* 2. 2.
C. flagnalis. *Scop. carn. n.* 1202.
Stellaria fol. omnibus linearibus. *Hall. helv. n.* 555.
S. aquatica fol. longis tenuiſſimis. *Raii ſyn.* 290. *Petiv. t.* 4.
Lenticula paluſtris anguſtifolia, fol. in apice diſſecto. *Loeſel. pruſſ.* 140. *t.* 38.
Aſline aquatica minor ſ. fluitans. *Bauh. pin.* 247.
*All the leaves linear bifid at the end; flowers hermaphrodite.*

DESCRIPTIONS, *&c.*

1. Stems long, round, branching, rooting; leaves in pairs, the upper ones radiating and floating on the ſurface of the water. Flowers ſeſſile in the axils; the upper ones male, the lower female [l]. Petals ſmall, white, thick, flat, creſcent-form; when magnified, they appear to be a collection of air-veſſels, to enable the flower to float [m]. Male and female flowers frequently oppoſite, in the boſom of the correſponding leaves [n]. Thunberg, who obſerved it in Japan, found the flowers always to be monoecous, but in two different manners; firſt a male flower in the uppermoſt, and female flowers in the lower axils; ſecondly, a male and a female flower in oppoſite axils of a leaf. The male flower is often ſolitary in one axil; but the female flowers are often two, one in each axil.

Very common in ditches and ſtanding waters, flowering from april to june. Annual.

β. The leaves of this are all conjugate, ovate, a little ſhorter and broader than in the foregoing, and ſlightly emarginate at the end [o]. This is larger than the others: leaves petioled, roundiſh, quite entire, conjugate; whereas in the former the lower leaves are linear [p]. Haller thinks that it may be the connecting link between the vernal and autumnal Starworts, and that they may poſſibly be one ſpecies. The difference in this variety is probably owing to

[f] L'Heritier. [g] Fl. cochinch. p. 342. [h] Linn. [i] Jacquin. [k] Hort. kew. [l] Relhan. [m] Withering. [n] Woodw. in With. [o] Pollich. [p] Haller.

its ſituation, in places where water has ſtood in the winter, or in ditches and marſhes dried up.

2. Haller ſays that the lower flowers are female, the upper male, as in the former. Linnæus and Pollich affirm that they are all hermaphrodite; Scopoli that they are polygamous (and thoſe of the foregoing dioecous). Hudſon unites both ſpecies, and attributes polygamous flowers to both. Wiggers inſiſts that the flowers are generally polygamous; ſometimes dioecous, ſeldom hermaphrodite.

This differs from the former in having all the leaves linear, and cleft at the end, to which Withering adds that the corolla is yellowiſh white; and Linnæus that it flowers in ſeptember. It is ſometimes ſo thickly matted together on deep marſhes, that one may walk upon it without ſinking [a].

In the Flora Lapponica he had united all theſe into one ſpecies.

CALLITRICHUM. See *Horninum*.]

[CALODENDRUM. (*From καλὸς and δένδρον, a beautiful tree.*)

*Lin. gen. Schreb. n.* 384. *Thunb. nov. gen.* 41. *Juſſ.* 427.

Claſſ. 5. 1. Pentandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, permanent, five-parted: *parts* ovate, acute, thickiſh, villoſe-muricate on the outſide, with the edges ſlightly revolute.

COR. *Petals* five, lanceolate, blunt, ſpreading, channelled, keeled, waved, villoſe, three times the length of the calyx.

*Nectaries* five, ſhaped like the petals, inſerted into the receptacle within them, linear-lanceolate, ſubulate at the tip, terminated by a gland, ſmooth, ſilvery-glandular, narrower than the corolla, but of the ſame length.

STAM. *Filaments* five, equal, the length of the corolla, four of which have anthers; one being uſually barren. *Anthers* ovate-cordate, grooved, inſerted into the back.

PIST. *Germ* pedicelled, capitate, muricate, ſuperior. *Style* inſerted into one ſide of the germ, filiform, the length of the ſtamens. *Stigma* ſimple, blunt.

PER. *Capſule* pedunculed, ovate, bluntly five-cornered, five-grooved, muricate, five-celled, five-valved.

SEEDS in pairs, triangular, convex at the back, ſmooth.

OBS. *The number of parts in the corolla, nectary, and ſtamens varies; it is ſeldom four, moſt frequently five, very ſeldom ſix. One of the ſtamens is commonly obſerved to be caſtrated.*

ESSENTIAL CHARACTER.

*Cor.* ſpreading, five-petalled. *Nect.* five-leaved. *Capſ.* five-celled.

SPECIES.

1. Calodendrum capenſe.

*Thunb. diſſ. p.* 43. *Linn. ſyſt.* 241.

Dictamnus capenſis. *Linn. ſuppl.* 232. *ſyſt.* 397.

DESCRIPTION, *&c.*

This is a tree, with branches oppoſite or three together. Leaves entire, ever-green. Flowers in terminating panicles, on oppoſite one-flowered pedunculs. Native of the Cape of Good Hope [b].

CALONYCTA. See *Galardia*.]

[CALOPHYLLUM. (Καλὸς & φύλλον, *fine-leaf.*)

*Lin. gen. n.* 658. *Reich.* 716. *Schreb.* 1587. *Gærtn. t.* 43. *Juſſ.* 258. *Jacqu. amer.* 269. Calaba. *Plum. nov. gen.* 39. *t.* 18.

Claſſ. 13. 1. Polyandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* four-leaved (two-leaved, *Jacqu.*): *leaflets* ovate, concave, coloured, deciduous; the two outer ones ſhorter.

COR. *Petals* four, oblong, concave, ſpreading.

STAM. *Filaments* many (ten, *Jacqu.*) filiform, ſhort. *Anthers* erect, oblong.

PIST. *Germ* roundiſh. *Style* filiform; the length of the ſtamens, (none, *Jacqu.*) *Stigma* headed, obtuſe.

PER. *Drupe* globular.

SEED. *Nut* globular, ſubacuminate, very large.

OBS. *Jacquin obſerved male flowers diſtinct; and Juſſieu has ſeen a polyadelphous ſpecies.*

[a] Linn. ſuec. [b] Thunberg.

ESSENTIAL CHARACTER.

*Cal.* four-leaved, coloured. *Cor.* four-petalled. *Drupe* globular.

SPECIES.

1. Calophyllum Inophyllum.

*Lin. ſpec.* 732. *Reich.* 2. 583. *fl. zeyl. n.* 201. *Gærtn. fruct.* 1. 200.

Inophyllum fl. octofido. *Burm. zeyl.* 131. *Pluk. alm.* 41. *t.* 147. *f.* 3. *Rumph. amb.* 2. 211. *t.* 71. *Rheed. mal.* 4. 79. *t.* 38. *Raii hiſt.* 1525.

*Leaves ovate.*

2. Calophyllum Calaba.

*Lin. ſpec.* 732. *Reich.* 2. 583. *fl. zeyl. n.* 202. *hort. cliff.* 206. *Jacqu. amer.* 269. *t.* 165. *pict.* 131. *t.* 249. *Swartz obſ.* 216. *Brown. jam.* 372. 20.

Inophyllum fl. quadrifido. *Burm. zeyl.* 130. *t.* 60. (very good). *Rheed. mal.* 4. 81. *t.* 39. *Raii hiſt.* 1537.

*Leaves ovate obtuſe.*

DESCRIPTIONS, *&c.*

Theſe are trees, natives of the Eaſt and Weſt Indies. The firſt was alſo obſerved by the late circumnavigators in the Society Iſles and New Caledonia.

1. Calyx the ſize of the petals. Flowers more racemed, and the leaves twelve times larger than in the following ſpecies. Leaves a ſpan long, and a hand broad, marked with tranſverſe diſtant ſtreaks [a]. The root exudes a whitiſh, clear gum, without ſcent. Flowers eight-petalled, ſnow-white, ſweet ſmelling, growing in racemes. Fruit the ſize of a walnut, under a fleſhy bark, and a woody ſhell, having a very oily nut; which is bitter, and yields a yellow reſinous juice [b].

It is a tree of great ſize, ninety feet in height, and twelve in thickneſs. Bark of the branches ſmooth, at firſt green, afterwards reddiſh; of the trunk thick, ſcaly, blackiſh and purple within, which when wounded exudes a yellowiſh, viſcid juice, frequently hardening to a gum. Leaves like thoſe of the Water-Lily. Fruit ſmooth, ſhining, green, when ripe reddiſh. The nut is at firſt ſweet, but afterwards very bitter. It is common in Malabar, in ſandy ſoils, and bears fruit twice a year, in march and ſeptember, frequently to the age of three hundred years. An oil is expreſſed from the nuts to burn in lamps, to aſſwage pains, and to make ointments. The bark and gum is alſo uſed for medical purpoſes [c].

In Java, *&c.* they plant this tree about their houſes, for the elegance of the ſhade, and the ſweetneſs of the flowers [d].

2. This alſo is a lofty tree, putting out branches from very near the ground, ſo that it is well adapted for hedges and walks: the younger branches are quadrangular. Leaves ovate obovate or oblong, blunt, emarginate, entire, ſhining, coriaceous, firm, with parallel tranſverſe ſtreaks, on ſhort petioles, oppoſite, four inches long. Flowers on axillary, ſimple, looſe racemes, uſually ſeven together, white and ſmelling ſweet. Fruit green, with little pulp and that hardiſh, involving a ſmooth, yellowiſh, aſh-coloured nut, in which is a white ſolid kernel. It is not eaten, but the Caribes expreſs an oil from it for domeſtic uſes. From the above deſcription it appears that there is a great affinity between this tree and the Mammea, except in the fruit. Calaba is the name by which it is known both among the Caribes and French [e].

Jacquin can hardly be induced to think that the Calaba of Martinico is the ſame with the Tajerouponna of the Hortus Malabaricus. According to the author of that work the wood is very hard, and of a reddiſh colour. The fruit is firſt green, then red; in taſte ſweet mixed with acid; in ſhape, ſize, and ſubſtance not unlike our Cornelian Cherry. It is eaten by the natives, and an oil is expreſſed from it for lamps.

[a] Linn. zeyl. [b] Burman. [c] Hort. malab. [d] Rumphius. [e] Jacquin.

Browne says that it is a pretty good timber, but does not bear the weather well: and that it is frequently used for staves and heading.

Burman named it *Inophyllum*, because the leaves are striated like the fibres of a muscle dissected longitudinally. The structure of them is very curious.

CALOPHYLLUM. See *Grias* and *Mesua*.]

CALTHA. [Καλαθος, *a Calathi forma, the name having been anciently applied to the Marigold, which when slightly expanded resembles a basket: others derive it from* καλλος, *Pulchritudo.*)

*Lin. gen. n.* 703. *Reich.* 761. *Schreb.* 957. *Gærtn. t.* 118. *Juss.* 234. Populago. *Tournef.* 145.

Class. 13. 7. Polyandria Polygynia.

Nat. order of *Multisiliquæ*. *Ranunculaceæ* Juss.

GENERIC CHARACTER.

CAL. none.

COR. *Petals.* five, ovate, flat, spreading, deciduous, large.

STAM. *Filaments* numerous, filiform, shorter than the corolla: *anthers* compressed, obtuse, erect.

PIST. *Germ* superior, five to ten (four to twelve, *H. in With.* six to fifteen, *Gr.*) oblong, compressed, erect. *Styles* none. *Stigmas* simple.

PER. *Capsules* as many, short, acuminate, spreading, one-celled, two-keeled, gaping in the superior suture.

SEEDS very many, (fifteen) ovate or ovate-oblong, smooth, affixed to the superior suture, in a double row.

ESSENTIAL CHARACTER.

*Cal.* none. *Pet.* five. *Nect.* none. *Caps.* several, many-seeded.

SPECIES.

1. Caltha palustris. *Marsh Marygold. Souci de Marais. Lin. spec.* 784. *Reich.* 2. 673. *lapp. n.* 227. *suec. n.* 511. *hort. cliff.* 228. *Hudf. angl.* 245. *With.* 583. *Curt. lond.* 1. *t.* 40. *abr. t.* 8. *Hall. helv. n.* 1188. *Neck. gallob.* 243. *Pollich pal. n.* 541. *Krock. sles. n.* 895. *Villars dauph.* 3. 720. *Fl. dan. t.* 668. *Berg. phyt.* 2. 85. *Baub. hist.* 3. 470. *Raii hist.* 700. *Besl. eyst. hyem. t.* 4. *f.* 2. *vern.* 7. *t.* 5. *f.* 1.

C. major. *Mill. dict. n.* 1.

C. pal. fl. simplici. *Baub. pin.* 276.

C. pal. major. *Ger.* 670. 1. *emac.* 817. 1.

C. pal. vulgatis simplex. *Park.* 1213. 1.

Populago. *Raii syn.* 272.—major. *Tabern. ic.* 750. palustris. *Seop. carn. n.* 698.

β. Caltha minor. *Mill. dict. n.* 2. *Ger.* 670. 2. Populago minor. *Tabern. ic.* 750. *f.* 2.

γ. C. pal. fl. pleno. *Baub. pin.* 276. *Tabern.* 751. *With.* 2. *Relh. n.* 413. β. *Clus.* 2. 114. 2. *Ger.* 671. 3. *emac.* 818. 3. *Park.* 1213. 2.

DESCRIPTION, *&c.*

[1. Root perennial. Stems several, almost upright, about a foot high, hollow, nearly round, smooth, branched, purple at bottom. Radical leaves on long petioles, cordate-reniform, smooth, shining, and notched or crenated: sometimes scalloped, sometimes entire. Stem-leaves nearly sessile, more pointed at top, and sharply crenated. Stipules brown, membranous and withering. Branches dichotomous. Peduncles one-flowered, upright, grooved. Corolla of five petals, (from five to seven) somewhat concave, large, without any gloss on the upper side. Anthers oblong, flat, bending inward, yellow; the inner row of filaments with broad anthers; the outer twice as long, club-shaped, with compressed anthers. Seeds beautiful, at bottom of an olive, and at top of a reddish colour.—Wet meadows, and by the sides of rivers, making a noble appearance, in march and april, sometimes so early as february [a].

The flowers gathered before they expand, are said to be a good substitute for capers. The juice of the petals, boiled with alum, stains paper yellow. Cows will not eat it, unless compelled by extreme hunger; it is a vulgar notion therefore, wholly unfounded, that the yellowness of butter in the spring is caused by this plant: where a high colour is not given by art, it is the effect of abundance of rich pasture. Boerhaave says, that when kine eat this plant, it occasions such an inflammation, that they generally die. On may-day the country people strew the flowers before their doors [b]. The garlands are also ornamented with it on that day. The leaves seldom appear to be eaten; but the flowers are often destroyed by a species of Chrysomela [c].

This is the first flower that announces the spring in Lapland, where it begins to blow toward the end of may [d].]

Miller insists that the *greater* and *smaller* Marsh-Marigolds never vary either in their natural places of growth, or when cultivated in a garden. The variety with very double flowers is preserved in many gardens for its beauty.

PROPAGATION AND CULTURE.

This is propagated by parting the roots in autumn. It should be planted in a moist soil and shady situation, and may be allowed room where few other plants will thrive; during the season of flowering it will afford an agreeable variety. The Marsh-Marigold with double flowers, does not appear so early in the spring as the single, but continues much longer in beauty. It flowers from may to the middle of june.

[CALTHA. See *Arnica, Calendula, Verbesina.*

CALTROPS. See *Tribulus.*

CALYCANTHUS. (*From* καλυξ, *Calyx, and* ανθος *Flos; the flower consisting of calycine folioles, without petals.*)

*Lin. gen. n.* 639. *Reich.* 695. *Schreb.* 870. *Juss.* 342. Beureria. *Ehret.* Butneria. *Duham.* Basteria. *Miller.*

Class. 12. 5. Icosandria Polygynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, pitcher-shaped, squarrose; leaflets coloured, lanceolate; the superior ones gradually larger, resembling petals.

COR. none, except the calycine folioles, representing petals.

STAM. *Filaments* numerous, subulate, inserted into the neck of the calyx. *Anthers* oblong, furrowed, growing to the top of the filaments.

PIST. *Germs*, a great many, ending in subulate compressed styles of the length of the stamens. *Stigmas* glandulous.

PER. none; the calyx being thickened, obovate, and berried.

SEEDS very many, tailed.

ESSENTIAL CHARACTER.

*Cal.* one-leafed, pitcher-form, squarrose, with coloured leaflets. *Cor.* calycine. *Styles* very many, with a glandulous stigma. *Seeds* very many, tailed, within a succulent calyx.

SPECIES.

1. Calycanthus floridus. *Carolina All-spice. Lin. spec.* 718. *Reich.* 2. 554.]

Basteria. *Mill. dict.* and *fig. t.* 60.

[Beureria. *Ehret. pict. t.* 13.

Butneria. *Duham. arb.* 1. 114. *t.* 45.

Frutex corni fol. &c. *Catesb. car.* 1. *t.* 46.

*Inner petals longer than the outer.*

2. Calycanthus præcox. *Japan All-spice. Lin. spec.* 718. *Reich.* 2. 555. *Ait. hort. kew.* 2. 220. *t.* 10. *Kæmpf. amæn. t.* 879.

*Inner petals minute.*]

DESCRIPTIONS, *&c.*

1. This shrub arrives at the height of eight or ten feet, where it grows naturally; but it seldom rises more than four feet high in this country, dividing into many slender branches near the ground; covered with a brown aromatic bark, with two entire leaves placed opposite at every joint on short foot-stalks; the flowers grow single on short peduncles at the extremity of the branches; they have two series of narrow thick petals, which spread open, and turn inward at the top, like those of the Starry

[a] Curtis, Withering, and Woodw. in With.

[b] Withering. [c] Curtis. [d] Linn.

Anemone, or the Virgin's Bower: theſe are of a duſky purple colour, and have a diſagreeable ſcent; they appear in may. The bark of this ſhrub is brown, and has a very ſtrong aromatic ſcent; whence the inhabitants of Carolina gave it the title of All-ſpice.

[There are two varieties of it:

1. Foliis oblongis. *Long-leaved Carolina All-ſpice.*
2. Foliis ſubrotundo-ovatis. *Round-leaved Carolina All-ſpice.*]

Mr. Cateſby, who firſt introduced it into the Engliſh gardens (in 1726), procured it from the country ſome hundred miles on the back of Charles-town in Carolina. It was very ſcarce here till about the year 1757, when many plants were brought from Carolina, having been greatly increaſed in the gardens near Charles-town.

Mr. Miller gave it the name of *Baſteria*, in honour of his worthy friend Dr. Job Baſter, F. R. S. of Zurick Zee, in Holland. About the ſame time Monſ. Duhamel gave it the name of *Butneria*.

[2. Linnæus ſays that this ſhrub is unknown to him; that it ſeems to be of this genus, but a different ſpecies, becauſe it flowers before the leaves, and the inner petals are ſaid to be yellow and ſmaller. Native of Japan[a].

Introduced 1771, by Benjamin Torin, Eſq.[b].]

PROPAGATION AND CULTURE.

1. This ſhrub will thrive in the open air in England, if it be planted in a warm ſituation and dry ſoil. It is propagated by laying down the young branches, which will take root in one year, and may then be taken from the mother plant, and ſet where they are deſigned to remain, for they do not bear tranſplanting well, after they are grown to any ſize. When the layers are tranſplanted, the ſurface of the ground ſhould be covered with mulch, to prevent the drying winds from penetrating the ground to the roots; and if the ſeaſon prove dry, they muſt be watered once a week, but ſhould not have too much wet, for that will rot their tender fibres.

The beſt time for laying down the branches is in autumn, but they ſhould not be tranſplanted till the ſpring twelve months after; for the ſpring is the ſafeſt time to remove theſe plants. After the branches are laid down, there ſhould be ſome old tanner's bark laid upon the ſurface to keep out the froſt; which ſhould alſo be done every winter, whilſt the plants are young.

[CALYPTRANTHES. (*From* καλυπτρα, *a veil, and* ανθος *a flower.*)

*Lin. gen. Schreb. n.* 845. *Swartz prodr.* 5. 79. Chytraculia. *Brown. jam.* 239. Sujygium. *Brown.* 240. Jambolifera. *Lin. gen. n.* 479. *Gærtn. t.* 36. *Juſſ.* 321.

Claſſ. 12. 1. Icoſandria Monogynia.

Nat. order of *Heſperideæ. Onagræ* & *Myrti* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-ſhaped, truncate, toothleſs, or very obſcurely four-toothed, ſuperior, permanent: covered with an orbicular, concave, deciduous *lid.*

COR. none.

STAM. *Filaments* very many, capillary, inſerted into the inſide of the calyx at the rim. *Anthers* roundiſh, twin, ſmall.

PIST. *Germ* roundiſh, faſtened to the bottom of the calyx, two-celled: with a few ſeeds fixed to the partition. *Style* ſimple, filiform, bent in the length of the ſtamens. *Stigma* blunt.

PER. *Berry* globular or oblong, crowned with the calyx, one-celled.

SEED ſingle, or few, ſlightly angular.

OBS. Jambolifera *agrees with the other ſpecies of this genus in having a bell-ſhaped calyx covered with a lid, very many ſtamens inſerted into the rim of the calyx and bent down into its cavity before the expanſion of the flower, and a two-celled many-ſeeded germ, &c. And ſince it differs only in having an oblong berry, often a little contracted in the middle, with a ſimilar ſeed, it can hardly conſtitute a diſtinct genus.*

ESSENTIAL CHARACTER.

*Cal.* ſuperior, truncate, covered with a veil-ſhaped deciduous lid. *Cor.* none. *Berry* one-celled, one to four-ſeeded.

SPECIES.

1. Calyptranthes Chytraculia.
   *Swartz prodr.* 79.
   Myrtus Chytraculia. *Lin. ſpec.* 675. *Reich.* 2. 479. *amoen.* 5. 398.
   Chytraculia. *Brown. jam.* 239. *t.* 37. *f.* 2.
   *Arboreous, peduncles terminating panicled trichotomous tomentoſe, leaves ovate attenuated at the tip.*
2. Calyptranthes Zuzygium.
   *Swartz prodr.* 79.
   Myrtus Zuzygium. *Lin. ſpec.* 675. *Reich.* 2. 479. *amoen.* 5. 398.
   Zuzygium. *Brown. jam.* 240. *t.* 7. *f.* 2.
   *Arboreſcent, peduncles axillary trichotomous patulous, leaves ovate blunt, branches dichotomous.*
3. Calyptranthes rigida.
   *Swartz prodr.* 80.
   *Arboreſcent, peduncles ſolitary axillary three-flowered or thereabouts, leaves ovate acute convex veineleſs rigid.*
4. Calyptranthes Jambolifera.
   Jambolifera. *Linn. zeyl. n.* 139. pedunculata. *Lin. ſpec.* 497. *Reich.* 2. 156. *Gærtn. fruct.* 1. 178. *Lour. cochinch.* 230.
   Jambolana. *Rumph. amb.* 1. 131. *t.* 34. *Acoſta arom.* 299. *Bauh. pin.* 460.
   Prunus indica, fructu nigro, Olivæ magnitudine. *Burm. zeyl.* 197.
   *Leaves ovate emarginate, corymb terminating.*
5. Calyptranthes odorata.
   Jambolifera odorata. *Lour. cochinch.* 231.
   *Leaves ovate, obliquely truncate at the baſe, corymb terminating diſtich.*
6. Calyptranthes reſinoſa.
   Jambolifera reſinoſa. *Lour. cochinch.* 231.
   *Leaves oblong, peduncles lateral.*

DESCRIPTIONS, &c.

1. The leaves of this tree are ſmooth and oppoſite. The lid is faſtened to the calyx laterally, but afterwards turns back, and then the filaments iſſue forth, which before had been twiſted and concealed.

It is reckoned an excellent timber wood, but it ſeldom exceeds fourteen or fifteen inches in diameter. Native of Jamaica, chiefly in the pariſh of St. John. *Baſtard Green-heart*[c].

Introduced in 1778, by Thomas Clark, M. D.[d]

2. This ſhrub ſeldom riſes above ten or twelve feet in height; the whole is buſhy, and bears black berries, crowned with the margin of the cup. Theſe contain four ſmooth, ſlightly angular ſeeds, one or two only of which uſually arrive at maturity. The ſtyle is longer than the ſtamens, and the ſtigma is acute. Native of Jamaica[e].

Introduced in 1778, by Thomas Clark, M. D.[d]

3. Native of Jamaica[f].

4. This is a tree above the middle ſize, with ſpreading branches, the ſmaller ones brachiate. Leaves oppoſite, quite entire, ſmooth, hardiſh, petioled. Flowers terminating, in racemed corymbs: calyx four-cleft, corolla four-petalled, white. Berry ovate-oblong, almoſt cylindric, blunt, umbilicate, black, juicy, ſweetiſh-acid, eſculent[g].

According to Linnæus, the peduncles are axillary, oppoſite, trichotomous (the partial ones three-flowered) continuing frequently upon the boughs below the leaves, after the fruit is fallen off[h].

Gærtner deſcribes the berry as inferior, crowned with the toothleſs annular baſe of the calyx, ovate-cylindric, ſlightly narrowing in the middle, coriaceous, ſlender, one-celled. Receptacle a ſmall ſtar with a tranſverſe wrinkle prominent on one ſide. Seed ſingle, the ſize and form of the cavity of the

[a] Linn. ſpec. [b] Hort. kew.

[c] Browne. [d] Hort. kew. [e] Browne. [f] Hort. kew.
[g] Swartz. [h] Loureiro. [i] Fl. zeyl. p. 58.

berry,

berry, fleſhy, hard, bipartile. Native of the Eaſt-Indies and China.

5. This is a ſmall tree about five feet high, with a very ſtraight ſingle ſtem, and brachiate branches. Leaves quite entire, thick, ſmooth, whitiſh underneath, dotted, ſmelling like Cummin. Peduncles, calyx, and corolla entirely white. Calyx four-cleft; corolla four-petalled; ſtamens eight. Berry ſuperior, ovate, ſmall, white, dotted, ſmooth, containing one ſeed. The young leaves are put into ſalads, and are not unpleaſant.

Loureiro obſerved it in the gardens in Cochinchina. On account of its ſmell, it may be doubted, whether it be not the Myrtus Cumini of Linneus, or the Jambosa ceramica of Rumphius, though it ſhould rather ſeem to be the Folium Inſtinctus of the latter, l. 5. c. 47. p. 202.

6. This is a middle-ſized tree, with ſpreading branches, and a very tough reſinous bark. Leaves quite entire. Flowers white, on many-flowered axillary peduncles: calyx four-toothed; corolla four-petalled, bell-ſhaped. Berry roundiſh, ſmall, black, four-celled. Stamens eight.

Native of Cochinchina, where the fiſhermen dye their nets in a ſtrong decoction of the root, to preſerve them from rotting.

It appears to be the Tenarius major of Rumphius, l. 5. c. 38. t. 122.[a]

[CAMANBAYA. See *Tillandſia*.

CAMARA. See *Lantana*.

CAMAX. (*Καμαξ, the prop of a vine, a ſtake or pole.*) *Lin. gen. Schreb. n.* 365. Ropourea. *Aubl. guian. t.* 78. *Juſſ.* 421.

Claſſ. 5. 1. Pentandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted: *parts* roundiſh.

COR. one-petalled, wheel-ſhaped: *tube* very ſhort: *border* five-parted; *parts* roundiſh villoſe above.

STAM. *Filaments* five, inſerted into the corolla between the ſegments, villoſe.

PIST. *Germ* roundiſh, villoſe, ſuperior. *Style* capillary. *Stigmas* three or four, ſharp.

PER. *Berry* ovate, villoſe, four-celled.

SEEDS very many, neſtling in a viſcid pulp.

ESSENTIAL CHARACTER.

*Cor.* wheel-ſhaped. *Filaments* inſerted between the ſegments of the corolla. *Berry* four-celled, many-ſeeded. All villoſe.

SPECIES.

1. Camax guianenſis.
Ropourea guianenſis. *Aublet. guian.* 1. 198. *t.* 78.

DESCRIPTION, *&c.*

This is a ſhrub growing to the height of twelve or fifteen feet, with a ſimple, knotty, cylindric ſtem. Leaves many, in whorls at the joints, declining, unequally pinnate, with ſix alternate leaflets, which are ſeſſile, oval, acuminate, the largeſt of them ten inches long, and three broad, and a little above each of them is a ſmall ſpine iſſuing from the midrib, which is three feet or more in length. The flowers are ſeſſile in great numbers at the baſe of the leaves, and in the intervals between them. It is called *Bois Gaulette* by the Creoles, and *Aroupouron* by the Couſſaris, one of the nations of Guiana, where it is a native, and flowers in January. The inhabitants and negroes uſe the branches of this ſhrub for wattling their huts[a].

[CAMBOGIA. (*So named becauſe it comes from the province Cambodia or Cambodje.*)
*Lin. gen. n.* 650. *Reich.* 706. *Schreb.* 883. *Juſſ.* 256.

Claſſ. 13. 1. Polyandria Monogynia.

Nat. order of *Tricoccæ*. *Gutliferæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-leaved, leaflets roundiſh, concave, deciduous.

COR. *Petals* four, roundiſh-oblong, concave, with oblong claws.

STAM. *Filaments* very many, ſhort. *Anthers* roundiſh.

PIST. *Germ* roundiſh, ſtriated, *ſtyle* none. *Stigma* four-cleft, obtuſe, permanent.

PER. *Pome* roundiſh, eight-angled, eight-celled.

SEEDS ſolitary, reniform-oblong, ſlightly compreſſed.

ESSENTIAL CHARACTER.

*Cor.* four-petalled. *Cal.* four-leaved. *Pome* eight-celled. *Seeds* ſolitary.

SPECIES.

1. Cambogia Gutta.
*Lin. ſpec.* 728. *Reich.* 2. 576. *amæn.* 1. 402. *ſt. zeyl. n.* 195. *mat. med.* 135. *Laur. cochinch.* 332. *Blackw. t.* 392.
Coddam-pulli. *Rheed. mal.* 1. 41. *t.* 24.
Carcapuli. *Acoſtæ, p.* 296, 297. *Cluſ. Bauh. biſt.* 1. 137. *Raii biſt.* 1661. *Burm. zeyl.* 27. *Park.* 1635.
Cambogium. *Dale pharm.* 357.
Gambogia. *Lewis mat. med.* 289.

DESCRIPTION, *&c.*

The Cambogia is a tall tree, with a trunk ſometimes as thick as two men can compaſs, with ſpreading, oppoſite branches. Leaves lanceolate-ovate, quite entire, flat, thick, ſcattered, ſmall, oppoſite, petioled. Flowers in whorls, ſeſſile, ſaffron-coloured. Fruit two inches in diameter, on peduncles an inch in length: rind yellow, thin, ſmooth; pulp yellow, ſucculent, ſweet, eſculent[a]. According to the Hortus malabaricus, the fruit is firſt green, then yellowiſh, and when ripe whitiſh.

Native of the Eaſt-Indies, and of the woods in China and Cochinchina; very abundant in Siam and Cambodia, where inciſions are made in the bark and a great quantity of Gummi Guttæ or Gamboge is extracted and exported into foreign countries.

This concrete is a gum-reſin, in part inflammable, compact, dry, yellow inclining to orange colour, without ſmell, and almoſt without taſte, producing however a ſlight ſenſation of acrimony in the throat. A greater quantity of it is diſſolved in ſpirits of wine than in water, to which it imparts a lemon colour.

It is uſed medicinally in the Eaſt, as a purgative, hydragogue and emetic, particularly in dropſies and worm caſes. It is ſaid to loſe the latter quality when macerated in vinegar.

The principal uſe however of Gamboge is in painting in miniature and water colours.

The fruit is eaten at meals in the Eaſt-Indies, and being much eſteemed for provoking the appetite, is a frequent ingredient in their ſauces.

CAMBULU. See *Bignonia*.

CAMELINA. See *Eryſimum*, and *Myagrum*.]

[CAMELLIA. (*So named in honour of George Joſeph Kamel, a Jeſuit, whoſe name is commonly written Camellus. His* Syllabus ſtirpium in inſula Luzone Philippinarum *forms the appendix to the third volume of Ray's hiſtory.*)
*Lin. gen. n.* 848. *Reich.* 914. *Schreb.* 1145. *Juſſ.* 262.

Claſſ. 16. 5. Monadelphia Polyandria.

Nat. order of *Columniferæ*. *Aurantia* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* many-leaved, roundiſh, imbricate; the ſcales roundiſh, very blunt, the inner ones gradually larger, concave, deciduous.

COR. *Petals* five, obovate, coaleſcing at the baſe.

STAM. *Filaments* numerous, erect, coaleſcing below into a crown larger than the ſtyle, above unconnected, ſhorter than the corolla: *anthers* ſimple.

PIST. *Germ* roundiſh. *Style* ſubulate, length of the ſtamens; *ſtigma* acute, reflex.

PER. *Capſule* turbinate, woody, marked with ſome furrows.

SEEDS. Kernels equal in number to the ſtreaks of the capſule, roundiſh, often filled with ſmaller ſeeds.

ESSENTIAL CHARACTER.

*Cal.* imbricate, many-leaved; the inner leaflets larger.

[a] Loureiro. [a] Aublet. [a] Loureiro.

SPECIES.

1. Camellia japonica. *Japan Rose.*
*Linn. spec.* 982. *Syst.* 632. *Reich.* 3. 368. *Thunb. jap.* 272. *Curtis mag. t.* 42. *Jacqu. ic. vol.* 2. *collect.* 1. 117.
Thea chinensis, pimentæ jamaicensis fol., fl. roseo. *Pet. gaz. t.* 33. *f.* 4.
Tsubaki montanus. *Kæmpf. amæn. t.* 851.
β. Tsubaki hortensis. *Kæmpf. amæn.* 852.
Rosa chinensis. *Edw. birds.* 2. *t.* 67.
*Leaves acutely serrate acuminate.*
2. Camellia Sasanqua.
*Lin. syst.* 632. *Thunb. jap.* 273. *t.* 30.
Sasanqua. *Kæmpf. amæn.* 853.
*Leaves obtusely serrate emarginate.*
3. Camellia drupifera.
*Laur. cochinch.* 411.
*Leaves ovate-oblong slightly crenate, flowers two or three together, terminating, drupes four-celled.*

DESCRIPTIONS, &c.

1. Bark ash-coloured; branches round and smooth. Leaves alternate, ovate, shining on both sides, thick and stiff, paler green beneath, on short petioles. Peduncles terminating, very short, commonly solitary, with the branches lengthened out beyond them. The calyx has about nine broad-ovate, thick, smooth leaves. Petals larger and longer, thickish, uniting at bottom into a tube full of nectareous juice. Stamens about fifty. Stigma unequally five-cleft [a].

It is a vast and lofty tree, in high esteem with the Japonese for the elegance of its large flowers, which exhibit a great variety of colours, but have no scent, and for its evergreen leaves. It is very common every where in their groves and gardens, flowering from october to april. It varies with single and double flowers, white, red and purple [b].

It is a native also of China, and occurs very frequently in Chinese paintings. It was cultivated before 1742, by Robert James Lord Petre [c].

2. A tree of a middling size, differing from the first species in having thinner, narrower leaves, obscurely serrate; flowers many times smaller, with oblong emarginate petals; and a much smaller and more slender stem. The flowers are borne singly at the ends of the branches: the calyx is five-leaved, sometimes six-leaved; the petals are five in number, sometimes six or seven, snow white and deciduous.

The leaves dried in the shade have a sweet smell; a decoction of them is used by the women to wash their hair with; and they are mixed with Tea, to give it a grateful odour. Indeed this so resembles the Tea plant, that it is distinguished by little else besides the coalescing stamens, and this is scarcely a sufficient mark of distinction, since the stamens coalesce only at the base, and even sometimes seem to be distinct. Native of Japan, flowering in november [d].

3. This is a middle-sized tree, with spreading branches. Leaves acuminate, smooth, hard, small, alternate, petioled. Flowers white, terminating, on two or three peduncles together, one on each. Petals eight, oblong, emarginate. Style quadrifid, equal to the stamens. Drupe roundish, with a grooved, four-celled nut, and roundish kernels. The fruit is equal in size to the walnut, and not much unlike it, it is not however esculent. It is both wild and cultivated in Cochinchina.

The oil expressed from the nuts is used by the natives to anoint their hair, and for various medical purposes; it has a pleasant odour, and does not easily become rancid [e].

PROPAGATION AND CULTURE.

1. Having been hitherto scarce, and kept up to a high price, it has been generally treated as a stove plant, though it has been sometimes placed in the greenhouse. When it shall hereafter become more common among us, it may perhaps be treated in the same manner as the Magnolia. It is propagated by layers [f]. It may also be propagated by cuttings, in the same manner as directed for Gardenia.

[a] Jacquin. [b] Thunberg. [c] Hort. kew. [d] Thunberg. [e] Loureiro. [f] Curtis.

The other species have not yet been introduced into Europe.

CAMEL'S HAY. See *Andropogon.*]

CAMERARIA. (*So named by Plumier from Joachim Camerarius, a physician and botanist of Nuremberg, who published an edition of Matthiolus in Latin and German, with new figures, and many observations.*)
*Lin. gen. n.* 300. *Reich.* 326. *Schreb.* 423. *Plum. gen.* 18. *t.* 29. *Juss.* 145.
Class. 5. 1. Pentandria Monogynia.
Nat. order of *Contortæ. Apocineæ* Juss.

GENERIC CHARACTER.

CAL. *Perianth* five-cleft, acute, converging, very small.
COR. monopetalous, funnel-form; *tube* cylindric, long, bellied out at the base and tip; *border* five-parted, flat; *divisions* lanceolate, oblique.
STAM. *Filaments* five, very small, from the middle of the tube. *Anthers* converging.
PIST. *Germs* two, with lateral appendages; *styles* hardly any; *stigmas* obscure.
PER. *Follicles* two, horizontally reflected, oblong, obtuse at both ends, and sending forth a lobe each way near the sides of the base, one-celled, one-valved.
SEEDS numerous, ovate, inserted on the larger ovate membrane at the base, imbricate.

ESSENTIAL CHARACTER.

Contorted. *Follicles* two, horizontal. *Seeds* inserted into their proper membrane.

SPECIES.

1. Cameraria latifolia. *Bastard Mangeneel.*
*Lin. spec.* 308. *Syst.* 254. *Reich.* 599. *hort. cliff.* 76. *Jacqu. amer.* 37. *t.* 182. *f.* 86. *pict.* 24. *t.* 39. *Plum. ic.* 60. *t.* 72. *f.* 1. *Brown. jam.* 182.
*Leaves ovate acute at both ends, transversely striated.*
2. Cameraria angustifolia.
*Lin. spec.* 308. *Reich.* 599. *Plum. ic.* 61. *t.* 72. *f.* 2.
*Leaves linear.*

DESCRIPTIONS, &c.

1. [This is a tall elegant tree, about thirty feet in height, the whole abounding with an acrid milky juice. Branchlets mostly dichotomous. Leaves quite entire, very shining, rather rigid, petioled, opposite, numerous, somewhat resembling those of Myrtle. Peduncles one or many-flowered, slender, long, axillary or from the forks of the branchlets. Flowers small, white. Follicles brown, bivalve in their structure, but not opening.—Cuba, Jamaica, Domingo, in meadows [g].]

It was sent to Mr. Miller from the Havanna, by Dr. Houstoun. The flowers appear in august, but never produce any seeds in England.

2. [Stem irregularly branching, shrubby. Leaves opposite, quite entire, the middle nerve decurrent. Flower and fruit much smaller than in the foregoing species, as is the whole plant [h].]

It grows about eight feet high. The leaves have two ribs running longitudinally. The flowers are produced scatteringly at the ends of the branches. It abounds with an acrid milky juice, like the other sort, and grows naturally in Jamaica.

PROPAGATION AND CULTURE.

These plants are propagated by seeds, which must be procured from the places of their growth. They may also be increased by cuttings planted in a hot-bed during the summer months. They must have a bark-stove, for they are very tender; but in warm weather they must have plenty of air.

[CAMERARIA *Dill.* See *Montia.*
CAMMARUM. See *Aconitum.*
CAMMOCK. See *Ononis.*
CAMOCLADIA. See *Conocladia.*
CAMOMILE. See *Anthemis.*]

CAMPANULA. (*Diminu. from Campana; a little bell; from the shape of the corolla.*)
Eng. *Bell-flower.* Fr. *Campanule.*
*Lin. gen.* 218. *Reich.* 234. *Schreb.* 290. *Gærtn. t.* 31. *Tournef. t.* 37. *Juss.* 164.
Class. 5. 1. Pentandria Monogynia.
Nat. order of *Campanaceæ.—Campanulaceæ* Juss.

[g] Jacqu. & Browne. [h] Plumier.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, acute, erect-expanding, superior.

COR. monopetalous, bell-form, impervious at the base, half-five-cleft, marcescent; *divisions* broad, acute, spreading. *Nectary* in the bottom of the corolla, composed of five valves, acute, converging, covering the receptacle.

STAM. *Filaments* five, capillary, very short, inserted on the tips of the valves of the nectary; *anthers* longer than the filaments, compressed.

PIST. *Germ* angular, inferior: *style* filiform, longer than the stamens; *stigma* three-parted, oblong, thickish; *divisions* revolute.

PER. *Capsule* roundish, angular, three or five-celled, emitting the seeds at so many lateral openings.

SEEDS numerous, small; *Receptacle* columnar, adnate.

OBS. *The figure of the Pericarp is indeterminate.*

Trachelium of Ray, *has the Pericarp villose, scabrous, three-celled.*

Rapunculus of Ray *has the Pericarp smooth, ovate, three-celled.*

Medium of Knaut *has the Pericarp covered with five valves, five-celled.*

Speculum Veneris of Ray *has the Pericarp columnar, prismatic, three-celled.*

Pentagonia *has the corolla wheel-shaped.*

Erinus *differs in having the corolla unequal, stigma simple, capsule gaping at top.*

*In* C. peregrina *the sinuses of the calyx are not reflex, the corolla is intermediate between bell-shaped and wheeled, and differs in having the pistil shorter than the stament.*

ESSENTIAL CHARACTER.

*Cor.* bell-form, the bottom closed with staminiferous valves. *Stigma* three-cleft. *Capf.* inferior, gaping with lateral pores.

SPECIES.

* *Leaves more glossy and narrow.*

[1. Campanula cenisia. *Ciliate Bell-flower.*
*Lin. spec.* 1669. *syst.* 206. *Reich.* 454. *Hall. helv. n.* 696. *Allion. pedem. n.* 395. *t.* 6. *f.* 2. *Vill. dauph.* 2. 499.
*Stems one-flowered; leaves ovate, smooth, quite entire, subciliate.*

2. Campanula uniflora.
*Lin. spec.* 231. *syst.* 206. *Reich.* 454. *lapp. n.* 85. *t.* 9. *f.* 5, 6.
Conf. *Hall. enum.* 495. *n.* 15. *emend.* 1. *n.* 163. *Allion. n.* 402. *t.* 6. *f.* 1. *Villars* 500. *n.* 2.
*Stem one-flowered; calyx equalling the corolla.*

3. Campanula pulla. *Ruffel Bell-flower.*
*Lin. spec.* 231. *syst.* 206. *Reich.* 454. *Jacqu. obf.* 1. 30. *t.* 18. *auftr.* 3. *t.* 285. *Scop. carn. n.* 223. *D'Alfo Aragon. n.* 176.
C. alpina latifolia, fl. pullo. *Baub. pin.* 93. *prodr.* 33. *Raii hift.* 741.
β. C. fol. fubrotundis. *Baub. prodr.* 34. *t.* 35.
*Stemlets one-flowered; ſtem-leaves ovate, crenate; calyxes drooping.*

4. Campanula rotundifolia. *Round-leaved Bell-flower.*
*Lin. ſpec.* 232. *Reich.* 455. *lapp. n.* 83. *ſuec. n.* 184. *Hudſ. angl.* 95. *With.* 216. *Curtis lond.* 4. 21. *Lightf. ſcot.* 141. *Hall. helv. n.* 701. *Scop. carn. n.* 224. *Pollich pal. n.* 206. *Nerk. gallob.* 115. *Villars dauph.* 2. 501. *Allion. pedem. n.* 398. *t.* 47. *f.* 2. *Krock. ſilef. n.* 310. *Ger.* 367. 3. *emac.* 452. 3. *Fl. dan. t.* 855. *Raii hiſt.* 740. *ſyn.* 277.
C. minor rot. vulgaris. *Baub. pin.* 93. *Mor.* 5. 2. 17.
C. min. ſylveſtris rot. *Park.* 651. 11.
β. C. min. rot. alpina. *Baub. pin.* 93. *prodr. t.* 34. *Mor.* 5. 2. 16. *Hall. helv. n.* 702. *Hudſ.* β. *With.* β. *Raii ſyn.* 277. *hiſt.* 740. *Neck. gallob.* 116.
C. cæſpitoſa. *Scop. carn. n.* 225. *Villars dauph.* 2. 500.
γ. C. alp. liniifolia cærulea. *Baub. pin.* 93. *prodr.* 34. *Lin. lapp. n.* 84. *Magn. monſp.* 47. *t.* 46. *Oeder dan. t.* 189. *Hall. helv. n.* 700. *Boce. muſ. t.* 103. *Barr. ic.* 457. *Hudſ.* γ.—uniflora edit. 1.—*With.* γ. *Raii hiſt.* 740. 16.
C. liniifolia. *Scop. carn. n.* 226.
*Radical leaves kidney-form; ſtem-leaves linear.*

5. Campanula patula. *Spreading, or Field Bell-flower.*
*Lin. ſpec.* 232. *Reich.* 455. *ſuec. n.* 186. *Hudſ.* 95. *With.* 216. *Hall. helv. n.* 698. *Scop. carn. n.* 227. *Pollich pal. n.* 207. *Krock. ſilef. n.* 311. *Villars dauph.* 2. 504. *Oed. dan. t.* 373. *Dill. elth. t.* 58. *f.* 68. (very good). *Sowerby Engl. bot. t.* 42.
Rapuntium fl. purpureo. *Morr. pin.*
C. minor rotundifolia, fl. in ſummis caulibus. *Baub. pin.* 93.
β. *Lin. ſuec.* 1. *n.* 178.
*Leaves ſtiff, the radical ones lanceolate-oval; paniele ſpreading.*

6. Campanula Rapunculus. *Rampion.*
*Lin. ſpec.* 232. *Reich.* 456. *Gærtn. fruct.* 1. 154. *Hudſ.* 95. *With.* 217. *Hall. helv. n.* 699. *Scop. carn. n.* 231. *Pollich pal. n.* 208. *Neck. gallob.* 116. *Krock. ſilef. n.* 312. *Villars dauph.* 2. 505. (*Fl. dan. t.* 855. is C. rotundifolia.) *Pluenck, ic. t.* 151.
Rapunculus eſculentus. *Baub. pin.* 92. *Raii hiſt.* 739. *Mor.* 5. 2. 13.
R. eſc. vulgaris. *Park.* 648. 1.
Rapuntium parvum. *Lob. obſ.* 165. *Ger.* 369. 2. *emac.* 453.
Rapunculum. *Dod. pempt.* 165.
*Leaves waved, the radical ones lanceolate-oval; paniele contracted.*

7. Campanula perſicifolia. *Peach-leaved Bell-flower.*
*Lin. ſpec.* 232. *Reich.* 456. *ſuec. n.* 187. *Gouan illuſt.* 7. *Bulliard. t.* 367. *Hall. helv. n.* 697. *Scop. carn. n.* 228. *Pollich pal. n.* 209. *Krock. ſilef. n.* 313. *Villars dauph.* 2. 505. *Ger.* 367. 1. *emac.* 451. *Park.* 651. *parad.* 355. *f.* 1. *Raii hiſt.* 738.
C. decurrens. *Mill. dict. n.* 2.
Rapunculus perſicifol., magno fl. *Baub. pin.* 93.
β. R. nemoroſus anguſtifolius, magno fl. *Baub. pin.* 93.
*Radical leaves obovate, ſtem leaves lanceolate-linear ſubſerrate ſeſſile remote.*

8. Campanula pyramidalis. *Pyramidal Bell-flower.*
*Lin. ſpec.* 233. *Reich.* 457. *Scop. carn. n.* 229.
C. lactеſcens pyram. *Ger.* 367. 2. *emac.* 451. 2. *Raii hiſt.* 738. *Park. parad.* 354. 2.
Rap. hortenſis, latiore fol., ſ. pyram. *Baub. pin.* 93.
Pyramidalis lævis. *Baub. hiſt.* 2. 808. *f.* 3.
*Leaves ſmooth and even ſerrate cordate, ſtem-leaves lanceolate; ſtems roughy ſimple; umbels ſeſſile lateral.*

[9. Campanula americana. *American Bell-flower.*
*Lin. ſpec.* 233. *Reich.* 457. *mant.* 337. *Ait. hort. kew.* 1. 220.
*Leaves cordate and lanceolate ſerrate; petioles of the lower ciliate; flowers axillary ſeſſile; corollas five-parted flat; ſtyles longer than the corolla.*

10. Campanula lilifolia. *Lily-leaved Bell-flower.*
*Lin. ſpec.* 233. *Reich.* 457. *hort. upſ.* 41. *Gmel. ſib.* 3. 148. *t.* 26. *Amm. ruth.* 11. *n.* 17. and 10. *n.* 15.
*Leaves lanceolate, ſtem-leaves ſharply ſerrate; flowers paniceled nodding.*

11. Campanula rhomboidea. *Germander-leaved Bell-flower.*
*Lin. ſpec.* 233. *Reich.* 458. *Hall. helv. n.* 693. *Scop. carn. n.* 230. *Villars dauph.* 2. 503. *Baub. pin.* 94. 6. *prodr.* 36. 2. *Baub. hiſt.* 2. 806. *f.* 2. *Raii hiſt.* 733. 9. *ſee* 739. 10.
Rapunculus Teucrii fol. *Barr. ic.* 567.
R. alpinus Teucr. fol. rhomboidalis. *Bocc. muſ.* 75. *t.* 61.
β. C. Alpini. *Lin. ſpec.* 1669.
C. pyramidalis minor. *Alp. exot.* 340. *Raii hiſt.* 738. 6.
*Leaves rhomboid ſerrate; ſpike one-ranked; calyxes toothed.*

12. Campanula unidentata. *One-toothed Bell-flower.*
*Lin. ſyſt.* 206. *ſuppl.* 139.
*Erect ſmooth; leaves lanceolate acute, one-toothed on each ſide; panicle divaricate leafy.*

13. Campanula capillacea. *Fine-leaved Bell-flower.*
*Lin. ſyſt.* 206. *ſuppl.* 139.
*Herbaceous erect; leaves ſubulate ſmooth; panicle terminal; flowers alternate.*

14. Campanula linearis. *Linear-leaved Bell-flower.*
*Lin. ſyſt.* 207. *ſuppl.* 140.
*Herbaceous erect; leaves linear entire ſmooth; flowers drooping; capſules hiſpid.*

15. Campanula Lobelioides. *Lobelia-like Bell-flower.*
*Lin. ſyſt.* 207. *ſuppl.* 140. *Ait. hort. kew.* 1. 219.
*Small ſtems round ſtiff ſmooth; leaves linear-lanceolate toothletted; corollas nearly funnel-form trifid and quadrifid.*

16. Campanula carpatica. *Carpathian,* or *heart-leaved Bell-flower.*
*Lin. ſyſt.* 207. *ſuppl.* 140. *Jacqu. hort.* 1. *t.* 57. *Ait. hort. kew.* 1. 219. *Curt. magaz. t.* 117.
*Leaves ſmooth cordate ſerrate petioled; branches filiform one-flowered.*

17. Campanula grandiflora. *Great-flowered Bell-flower.*
*Lin. ſyſt.* 207. *ſuppl.* 140. *Jacqu. hort.* 3. *t.* 2. *Curtis magaz. t.* 252.
*Leaves tern oblong ſerrate; ſtem one-flowered; flower ſpreading.*

18. Campanula aurea. *Golden Bell-flower.*
*Lin. ſyſt.* 207. *ſuppl.* 141. *Ait. hort. kew.* 1. 223.
*Capſules five-celled; leaves elliptic ſerrate ſmooth; flowers ſubpaniculed five-parted; ſtem ſtrubby fleſhy.*

19. Campanula tenella.
*Lin. ſyſt.* 207. *ſuppl.* 141.
*Stems diffuſed filiform; leaves ovate ſometimes one-toothed reflex; flowers ſolitary terminal.*

20. Campanula poroſa. *Porous-ſtalked Bell-flower.*
*Lin. ſyſt.* 207. *ſuppl.* 142.
*Leaves lanceolate gloſſy; ſtem erect porous with dots upward.*

21. Campanula undulata.
*Lin. ſyſt.* 207. *ſuppl.* 142.
*Leaves lanceolate toothed waved; flowers ſubſolitary peduncled.*]

** *Leaves rugged, broader.*

22. Campanula latifolia. *Broad-leaved Bell-flower. Giant Throatwort.*
*Lin. ſpec.* 233. *ſyſt.* 207. *Reich.* 458. *ſuec.* 188. *Hudſ.* 96. *With.* 218. *Lightf.* 141. *Hall. helv. n.* 691. *Oeder. dan. t.* 84. (white flower)—*t.* 782. *Murr.* (blue) *Krock. ſilef. n.* 314. *Villars dauph.* 2. 506.
C. maxima fol. latiſſimis. *Baub. pin.* 94. *Raii ſyn.* 276. *Mor.* 5. 3. 27.
Trachelium candidum anglicum majus. *Baub. hiſt.* 2. 807.
T. majus belgarum. *Cluſ. hiſt.* 2. 172. 1. *Ger. emac.* 448. 3. *Park.* 643. 1. *parad.* 356. 6. 355. *f.* 4. *Raii hiſt.* 732.
*Leaves ovate-lanceolate; ſtem very ſimple; columnar; flowers ſolitary, peduncled; fruits drooping.*

[23. Campanula rapunculoides. *Rampion-like Bell-flower.*
*Lin. ſpec.* 234. *Reich.* 458. *Gærtn. fruct.* 154. *Hall. helv. n.* 692. *Pollich pal. n.* 210. *Krock. ſilef. n.* 315. *Villars dauph.* 2. 507. *Weigel. pomer. rug. n.* 140. *Plenck, ic. t.* 152. *Baub. pin.* 94. 2. *Mor. hiſt.* 2. 460. *ſ.* 5. *t.* 3. *f.* 32. *Baub. hiſt.* 2. 807. *f.* 1. *Raii hiſt.* 733. 6.
*Leaves cordate-lanceolate; ſtem branching; flowers one-ranked, ſcattered; calyxes reflex.*

24. Campanula bononienſis. *Bologna* or *paniculed Bell-flower.*
*Lin. ſpec.* 234. *ſyſt.* 207. *Reich.* 459. *mant.* 337. *Hall. n.* 689. *Scop. carn. n.* 232. *Segu. ver.* 1. 176. *Baub. hiſt.* 2. 806. *f.* 3. *Mor.* 461. *t.* 4. *f.* 38. *Raii hiſt.* 733. *n.* 7.
*Leaves ovate-lanceolate, rugged beneath, ſeſſile; ſtem paniculed.*

25. Campanula graminifolia. *Graſs-leaved Bell-flower, Lin. ſpec.* 234. *ſyſt.* 208. *Reich.* 459. *Baub. pin.* 94. 16. *Raii hiſt.* 736. 24.
Trachelium. *Col. phyt.* 2. 25. *f.* 26. *Baub. hiſt.* 2. 802. *f.* 3. *Barr. ic.* 332.
*Leaves linear-ſubulate; head terminal.*

26. Campanula cinerea.
*Lin. ſyſt.* 208. *ſuppl.* 139.
*Erect, tomentoſe; leaves ſubulate, entire, erect, approximating; flowers ſolitary, terminal.*

27. Campanula hiſpidula.
*Lin. ſyſt.* 208. *ſuppl.* 142. *Comm. hort.* 2. 73. *t.* 37.
*Hiſpid; flowers erect; calyxes the length of the corolla.*]

28. Campanula Trachelium. *Great Bell-flower, great* or *nettle-leaved Throatwort,* or *Canterbury bells.*
*Lin. ſpec.* 235. *Reich.* 460. *ſuec. n.* 189. *Hudſ.* 96. *With.* 218. *Lightf.* 142. *Sowerb. eng. bot. t.* 12. *Relh. cantab. n.* 180. *Hall. helv. n.* 690. *Bulliard. t.* 319. *Pollich pal. n.* 211. *Neck. gallob.* 114. *Scop. carn. n.* 234. *Thunb. jap.* 88. *Krock. ſilef. n.* 316. *Villars dauph.* 2. 507.
C. vulgatior, fol. urticæ, vel major & aſperior. *Baub. pin.* 94. *Raii ſyn.* 276.
Trachelium majus. *Ger.* 364. *emac.* 448. 1. *Raii hiſt.* 732.
T. maj. fl. purpureo. *Park. parad.* 354. 4.
*Stem angular; leaves petioled; calyxes ciliate; peduncles trifid.*

29. Campanula glomerata. *Small* or *cluſtered Bell-flower. Little Canterbury bells.*
*Lin. ſpec.* 235. *Reich.* 460. *ſuec. n.* 190. *Hudſ.* 96. *With.* 219. *Sowerby eng. bot. t.* 90. *Lightf.* 142. *Relh. cantab. n.* 182. *Hall. helv. n.* 685. *Scop. carn. n.* 235. *Pollich pal. n.* 212. *Allion. pedem. n.* 411. *t.* 39. *f.* 1. var. *Krock. ſilef. n.* 317. *Villars dauph.* 2. 508.
C. pratenſis, fl. conglomerato. *Baub. pin.* 94. *Raii ſyn.* 277.
Trachelium alpinum, fl. conglom, &c. *Herm. par. t.* 235.
T. minus. *Baub. hiſt.* 2. 801. 2. *Ger. emac.* 449. 4. *Park.* 644. 4. *Raii hiſt.* 738.
β. Tr. oblongo fol. alpinum. *Boec. muſ.* 70. *t.* 58.
*Stem angular ſimple; flowers ſeſſile; head terminal.*

30. Campanula Cervicaria. *Waved-leaved Bell-flower.*
*Lin. ſpec.* 235. *Reich.* 461. *ſuec. n.* 191. *Hall. helv. n.* 686. *Dill. giſſ.* 121. *Pollich pal. n.* 213. *Gmel. ſib.* 3. 157. *n.* 26. *t.* 31. *Fl. dan. t.* 787. *Allion. pedem. n.* 412. *Krock. ſilef. n.* 318. *Villars dauph.* 2. 509.
C. fol. echii. *Baub. prodr.* 36.
*Hiſpid; flowers ſeſſile; head terminal; leaves lanceolate-linear waved.*

[31. Campanula thyrſoidea. *Long-ſpiked Bell-flower.*
*Lin. ſpec.* 235. *ſyſt.* 208. *Reich.* 461. *Hall. helv. n.* 688. *Scop. carn. n.* 233. *Jacqu. vind.* 211. *obſ.* 33. *t.* 21. *Fl. auſtr.* 5. *t.* 411. *Villars dauph.* 2. 510.
C. fol. echii. *Baub. pin.* 94? Echium alpinum luteum. *ejuſd.* 154.
Alopecuros alpinus, &c. *Baub. hiſt.* 2. 809.
Cervicaria major tenuifolia. *Thal. harc.* 32. *t.* 4.
Trachelium thyrſoides. *Cluſ. pann.* 688. *Raii hiſt.* 734.
T. ſpicatum tenuifolium. *Park.* 645.
*Hiſpid; raceme ovate-oblong terminal, ſtem entirely ſimple; leaves lanceolate-linear.*

32. Campanula petræa. *Great Stone Throatwort.*
*Lin. ſpec.* 236. *Reich.* 461. *Pluk. phyt. t.* 152. *f.* 5. *Segu. ver.* 1. 179. *Baub. pin.* 94. 15. *Krock. ſilef. n.* 319.
Trachelium majus petræum. *Pona hald.* 161. *Baub. hiſt.* 2. 801. *f.* 802. 1. *Ger. emac.* 449. 5. *Park.* 643. *f.* 2. *Raii hiſt.* 734.
*Stem angular, ſimple; flowers ſeſſile headed-glomerate; leaves tomentoſe beneath.*

*** *Capſules covered with the reflected finuſes of the calyx.*

33. Campanula dichotoma. *Dichotomous Bell-flower.*
*Lin. ſyſt.* 208. *Reich.* 462. *See n.* 38. β. *amen.* 4. 306.
*Capſules five-celled covered; ſtem dichotomous; flowers drooping.*]

34. Campanula Medium. *Coventry* or *Canterbury Bells.*
*Lin. ſpec.* 236. *Reich.* 462. *vir. cliff.* 16. *hort. cliff.* 64. *Scop. carn. n.* 236. *Krock. ſilef. n.* 320. *Baub. pin.* 94. 4. *Raii hiſt.* 732. 2.

Viola mariana. *Dod. pempt.* 163. *Ger.* 362. *emac.* 448. 1. *Park. par.* 354. *f.* 3.—Dodonæi, quibusdam Medium. *Bauh. hist.* 2. 804.

*Capsules five-celled covered; stem undivided erect leafy; flowers erect.*

[35. Campanula barbata. *Bearded* or *one-leafed Bell-flower.*

*Lin. spec.* 236. *syst.* 208. *Reich.* 462. *Hall. helv. n.* 694. *Jacqu. obs.* 2. 14. *t.* 37. *Allion. pedem. n.* 417. *Krock. silef. n.* 321. *t.* 38. *Villars dauph.* 2. 511. *Scop. ann.* 2. 45. *Bauh. pin.* 94. 11. *prodr. t.* 36. 1. *Pluk. phyt. t.* 153. *f.* 6. *Raii hist.* 733. 10.

Rapunculus montanus. *Bauh. hist.* 2. 808. *f.* 4.

*Capsules five-celled covered; stem quite simple with only one or two leaves; leaves lanceolate; corollas bearded.*

36. Campanula spicata. *Spiked Bell-flower.*

*Lin. spec.* 234. *Reich.* 463. *Hall. helv. n.* 687. *Pluk. phyt. t.* 153. *f.* 3. *Allion. pedem. n.* 414. *t.* 46. *f.* 2. & *t.* 47. *f.* 1. *Krock. silef. n.* 322. *Villars dauph.* 2. 510.

Trachelium altissimum hirsutum asperius, fol. angustis, flor. parvis. *Bauh. hist.* 2. 801. *f.* 3. *Raii hist.* 734. 11.

*Hispid; spike loose; flowers alternate; leaves linear, quite entire.*

37. Campanula alpina. *Alpine Bell-flower.*

*Lin. spec.* 1669. *syst.* 208. *Reich.* 463. *Jacqu. vind.* 210. *austr.* 2. *t.* 118. *Hall. helv. n.* 695. *Bauh. pin.* 94. 13. *Krock. silef. n.* 323.

Trachelium pumilum alpinum. *Clus. hist.* 171. *Raii hist.* 736. 21. *Park.* 645. 9.

*Stem simple; peduncles one-flowered axillary two-leaved.*

38. Campanula mollis. *Soft Bell-flower.*

*Lin. spec.* 237. *syst.* 209. *Reich.* 464. *Bocc. sic.* 83. *t.* 45. *f.* 1.

Viola mariana minor cærulea, &c. *Barr. ic.* 759.

β. C. dichotoma. *Lin. spec.* 237.

*Capsules five-celled covered peduncled; stem prostrate; leaves suborbiculate.*]

39. Campanula saxatilis. *Rock Bell-flower.*

*Lin. spec.* 237. *Reich.* 464. *Tourn. inst.* 111. 18. *Barr. ic.* 813.

Trachelium saxatile, &c. *Bocc. mus.* 2. 76. *t.* 64.

*Capsules five-keeled covered; flowers alternate nodding; leaves obovate, crenate.*

[40. Campanula sibirica. *Siberian Bell-flower.*

*Lin. spec.* 236. *syst.* 209. *Reich.* 464. *Gmel. sib.* 3. 154. *t.* 29. *Jacqu. austr.* 2. 60. *t.* 200.

*Capsules three-celled covered; stem panicled.*

41. Campanula tridentata. *Three-toothed Bell-flower.*

*Lin. syst.* 209. *Reich.* 465. *mant.* 44. *Schreb. dec.* 3. *t.* 2.

C. orientalis pumila, repens. fl. magno. *Tournef. cor.* 3.

*Capsule five-celled covered; stem one-flowered; radical leaves three-toothed.*

42. Campanula laciniata.

*Lin. spec.* 237. *Reich.* 465. *Tourn. itin.* 1. *t.* 99—260.

*Capsules covered peduncled; leaves serrate; the radical ones lyrate; stem-leaves lanceolate.*

43. Campanula stricta.

*Lin. spec.* 238. *Reich.* 465. *Tournef. cor.* 3. *penult.*

*Capsules covered; leaves rough with hairs; stem-leaves lanceolate serrate; stem quite simple; flowers sessile.*]

44. Campanula canariensis. *Canary Bell-flower.*

See CANARINA.

[45. Campanula fruticosa. *Shrubby Cape Bell-flower.*

*Lin. spec.* 238. *Reich.* 466. *Herm. afr.* 5.

Prismatocarpus fruticosus. *L'Herit. sert.* 2. *n.* 4.

*Capsules columnar five-celled; stem shrubby; leaves linear-subulate; peduncles very long.*]

46. Campanula Speculum. *Venus's Looking-glass.*

*Lin. spec.* 238. *Reich.* 466. *hort. upsal.* 41. *Curt. magaz. t.* 102. *Krock. silef. n.* 324. *Hall. helv. n.* 703. *Villars dauph.* 2. 514. *Scop. carn. n.* 237. *Pollich pal. n.* 214. *Neck. gallob.* 115. *Mur.* 21.

Speculum Veneris. *Ger. emac.* 439. 1. *Raii hist.* 742.—majus. *Park.* 1331. 1.

Prismatocarpus Speculum. *L'Herit. sert.* 3. *n.* 7.

*Stem very much branched, diffused; leaves oblong, subcrenate; flowers solitary; capsules prismatic.*

47. Campanula hybrida. *Corn Bell-flower; small Venus's Looking-glass; codded corn Violet.*

*Lin. spec.* 239. *Reich.* 466. *Hudf.* 97. *With.* 219. *Krock. silef. n.* 325. *Villars dauph.* 2. 514. *Hall. helv. n.* 704. *Mor.* 2. 457. *s.* 5. *t.* 2. *f.* 22.

Speculum Veneris minus. *Raii hist.* 743. 4. *syn.* 278. *Ger. emac.* 439. 2. *Park.* 1331. 2.

Prismatocarpus hybridus. *L'Herit. sert.* 3. *n.* 8.

Onobrychis altera Belgarum & Dodonæi. *Lob. ic. t.* 418.

Pentagonion, Viola pentagonia. *Tabern.* 316.

*Stem a little branching at the base and stiff; leaves oblong crenate; calyxes aggregate, longer than the corolla; capsules prismatic.*

[48. Campanula limonifolia.

*Lin. spec.* 239. *Reich.* 467. *Tournef. cor.* 3. 14.

*Branches expanding undivided; radical leaves elliptic even quite entire; flowers sessile in threes.*]

49. Campanula Pentagonia.

*Lin. spec.* 239. *syst.* 210. *Reich.* 467.

Prismatocarpus Pentagonia. *L'Herit. sert.* 3. *n.* 9.

Speculum Veneris, fl. ampliffimo, thracicum. *Raii hist.* 742. *Tourn. inst.* 112.

*Stem subdivided, very branching; calycine leaflets linear acuminate.*

50. Campanula perfoliata. *Perfoliate Bell-flower.*

*Lin. spec.* 239. *Reich.* 467. *hort. upsal.* 40. *hort. cliff.* 65. *Gron. virg.* 22. 29. *Mor.* 5. 2. 23. *Barr. ic.* 1133. *Raii hist.* 743. 3.

*Stem simple; leaves cordate, toothed, stem-clasping; flowers sessile, aggregate.*

[51. Campanula capensis. *Cape Bell-flower.*

*Lin. spec.* 240. *Reich.* 467. *Comm. hort.* 2. 69. *t.* 35.

*Leaves lanceolate toothed hispid; peduncles very long; capsules strigose.*

52. Campanula Elatines.

*Lin. spec.* 240. *Reich.* 468. *Allion. pedem. n.* 422. *t.* 7. *f.* 2.

*Leaves cordate toothed pubescent, petioled; stems prostrate; peduncles capillary many-flowered.*

53. Campanula hederacea. *Ivy-leaved Bell-flower.*

*Lin. spec.* 240. *Reich.* 468. *Hudf.* 97. *With.* 220. *Sowerb. eng. bot. t.* 73. *Oed. dan. t.* 330. bad. *Bauh. pin.* 93. 24. *prodr.* 34. 6. *Mor.* 2. 456. *s.* 5. *t.* 2. *f.* 18. *Pluk. phyt. t.* 23. *f.* 1. *Raii syn.* 277. 7. *hist.* 741. 17. *Bauh. hist.* 2. 797. *Pet. gaz. t.* 51. *f.* 2. *Ger. emac.* 452. 7. *Park.* 652. 16.

*Leaves cordate five-lobed petioled smooth; stem lax.*

54. Campanula crinoides. See *Lobelia Erinus.*

*Lin. syst.* 210. *Reich.* 468. *mant.* 44. *Herm. lugdb.* 110. *t.* 111?

*Stems diffused; leaves lanceolate subserrate decurrent with a scabrous line; flowers peduncled solitary.*

55. Campanula heterophylla.

*Lin. spec.* 240. *syst.* 210. *Reich.* 468. *Tourn. cor.* 3. *n.* 8, 9. *itin.* 1. *t.* 243.—1. 289. *edit. oct.*

*Leaves subovate smooth quite entire; stems diffused.*]

56. Campanula Erinus. *Forked Bell-flower.*

*Lin. spec.* 240. *syst.* 210. *Reich.* 469. *Lacst. it. hisp.* 127. *n.* 15. *Villars dauph.* 2. 514.

Erinos Fabii Columnæ minor. *Bauh. hist.* 2. 799. 2. *Raii hist.* 743.

Erini f. Rapunculi minimum genus. *Column. phytob.* 122. *t.* 37.

Rapunculus minor, fol. incisis. *Bauh. pin.* 92. 2. *Mor. hist.* 2. 458. *n.* 25.

Alsine oblongo fol. serrato, fl. cærulco. *Bauh. hist.* 3. 367.

*Stem dichotomous; leaves sessile, the upper ones opposite three-toothed.*

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[**** *New species from the Supplement, Thunberg, &c.*

57. Campanula sessiliflora.

*Lin. syst.* 210. *suppl.* 139.

*Prostrate; leaves linear-subulate entire; flowers axillary solitary sessile.*

58. Campanula fasciculata.

*Lin. syst.* 210. *suppl.* 139.

*Shrubby*

*Shrubby, erect; leaves ovate, with a tooth or two, recurved; flowers glomerate, terminal.*

59. Campanula paniculata.
*Lin. fyſt.* 210. *ſuppl.* 139.
*Herbaceous; ſtem panicled; branches divaricate; leaves lanceolate entire; flowers terminal, ſolitary.*

60. Campanula adpreſſa.
*Lin. fyſt.* 210. *ſuppl.* 140.
*Herbaceous, erect; leaves lanceolate toothed recurved ciliate at the baſe appreſſed; panicle decompound.*

61. Campanula verticillata. *Whorled-leaved Bell-flower.*
*Lin. fyſt.* 210. *ſuppl.* 241. *Pallas it.* 3. 719. *t.* G. *f.* 1.
*Leaves and flowers verticilled.*

62. Campanula procumbens.
*Lin. fyſt.* 211. *ſuppl.* 141.
*Stem dichotomous, diffuſed; leaves ovate crenate obtuſe; flowers ſolitary erect.*

63. Campanula triphylla.
*Lin. fyſt.* 211. *Thunb. jap.* 87.
*Leaves tern, linear; flowers by threes in a whorl.*

64. Campanula tetraphylla.
*Lin. fyſt.* 211. *Thunb. jap.* 87.
*Leaves by fours, oblong, ſerrate.*

65. Campanula glauca.
*Lin. fyſt.* 211. *Thunb. jap.* 88.
*Leaves ſeſſile ovate ſerrate glaucous beneath; ſtem angular panicled; peduncles one-flowered.*

66. Campanula marginata.
*Lin. fyſt.* 211. *Thunb. jap.* 89.
*Leaves lanceolate waved ſerrate margined; branches weak; flowers terminal ſolitary.*

67. Campanula gracilis.
*Forſt. florul. auſtr. n.* 84.
*Leaves linear-lanceolate obſcurely ſerrate; ſtem dichotomous; flowers ſolitary terminal.*

68. Campanula Bellardi.
*Allion. pedem. n.* 396. *t.* 85. *f.* 5.
*Stem naked one-flowered; leaves petioled elliptic-lanceolate toothed.*

69. Campanula veſula.
*Allion. pedem. n.* 397. *t.* 7. *f.* 1.
*One-flowered; leaves ſmooth oval toothed; ſtem almoſt naked; calyx ſmooth.*

70. Campanula ceſpitoſa.
*Allion. pedem. n.* 399. *Scop. carn. n.* 225. *t.* 4. *ann.* 2. 47. *Villars dauph.* 2. 500. *Scheuch. ic.* 6. *p.* 454. *Hall. helv. n.* 702. *Baub. prodr.* 34. *hiſt.* 2. 797.
*Radical leaves kidney-form gaſhed, ſtem-leaves toothed, upper ones quite entire.*

71. Campanula vaidenſis.
*Allion. pedem. n.* 400. *t.* 6. *f.* 1.
C. Scheuchzeri. *itin.* 454. *t.* 14. *f.* 1. *Vill. dauph.* 2. 503. *t.* 10.
*Hirſute; leaves lanceolate ſometimes toothletted; flower ſolitary nodding.*

72. Campanula urticifolia.
*Allion. pedem. n.* 406. *Turra prodr.* 64. *n.* 9. *Baub. hiſt.* 2. 804. *f.* 2.
*Stem roundiſh ſimple; upper leaves ſeſſile; ſpike one-ranked; peduncles one-flowered; calyxes ſmooth.*

73. Campanula alpeſtris.
*Allion. pedem. n.* 418. *t.* 6. *f.* 3. *Hall. helv. n.* 694. β.
C. Allionii. *Villars dauph.* 2. 512.
C. trilocularis. *Turra prodr.* 64. *n.* 10.
C. ſaxatilis, Ichii folio, flore magno. *Tournef. inſt.* 110. *Raii hiſt.* 734. *var. n.* 10.
*Stem quite ſimple one-flowered, leaves lanceolate quite entire acute hiſpid, corolla bearded, capſules three-celled covered.*

74. Campanula nitida. *Smooth-leaved Bell-flower.*
*L'Herit. ſert. angl. Hort. kew.* 1. 221.]
C. americana. *Mill. dict. n.* 13.
[C. amer. minor, fl. cæruleo patulo. *Rob. ic. Herm. lugdb.* 107.
Trachelium amer. minus, fl. cær. pat. *Dod. mem.* 119. *t.* 118.
*Leaves oblong crenate glofſy, thoſe on the ſtem lanceolate almoſt entire, corollas campanulate-rotate.*

75. Campanula priſmatocarpos. *Long-capſuled Bell-flower.*
*L'Herit. ſert. angl. t.* 3. *Hort. kew.* 1. 224.
*Capſules linear two-celled, leaves lanceolate looſely ſerrate very ſmooth, ſtem decumbent.*

76. Campanula fragilis.
*Cyrill. var. neap. faſc.* 1. 32. *t.* 11. *f.* 2.
C. ſaxatilis, &c. *Barr. ic.* 453.
C. parva rotundifolia, flore cæruleo pentagono grandi. *Raii hiſt.* 741.
*Stems procumbent, branches directed one way many-flowered, root-leaves kidney-form crenate, calyxes angular.*

77. Campanula virgata.
*Billard. fyr. dec.* 2. 11. *t.* 6.
*Branches wand-like; leaves lanceolate, ſharp at both ends, toothed, ſomewhat rugged; flowers in pairs ſeſſile; corollas deeply parted.*

78. Campanula repens.
*Lour. cochinch.* 139.
*Stem ſubdivided creeping, leaves oblong fleſhy, flowers ſolitary.*

DESCRIPTIONS, *&c.*

1. Root perennial, creeping, often a foot long, dividing into ſeveral branches at top. Stems numerous, ſimple, ſmall, weak, about three inches high. Root-leaves roundiſh, ſmooth, ciliate: ſtem-leaves (four or five) oblong, lanceolate, or linear, ſeſſile. Peduncle terminating, ſolitary. Flower large in proportion to the plant. Calyx hirſute with white hairs, ſimple or without any appendages; the ſegments triangular, broad, deep, blunt, commonly blue. Corolla blue, divided to the middle into five ſegments, which are frequently bent back, twice as long as the calyx. Capſule three-celled[a].

Native of the higher rocks of the Alps, about the Glacieres. On the higheſt pike of Mont Cenis, called Ronche: by the head of the river Durance; and on other neighbouring eminencies: alſo in Dauphiné. It was introduced in 1775, by Doctors Pitcairn and Fothergill, and flowers in june and july[b].

Haller has confounded this with the ſecond ſpecies.

2. Root fibrous, annual. Stem abſolutely ſimple, the length of a finger, obliquely erect, round, entire. Stem-leaves ſix or ſeven, alternate, the loweſt vertically ovate, the middle ones lanceolate, the uppermoſt linear, the laſt of theſe is immediately under the flower. A ſingle flower terminates the ſtem; it is nodding, bell-ſhaped, contracted towards the baſe, and blue. Fruit turbinate-ovate or pear-ſhaped, very large in proportion to the plant, ſlightly inclined, opening with three holes near where the capſule unites with the crowning calyx[c].

Native of the mountains of Lapland; where it is very rare, and flowers in the beginning of july.

If it be the ſame ſpecies with that of Haller, Allioni, and Villars, it alſo grows wild in Switzerland, Piedmont, and Dauphiné.

There is certainly no agreement whatever between Linnæus's and Allioni's figures. (See n. 71.) In the latter it is repreſented a ſpan high, the ſtem and leaves very hairy, ſome of the latter toothed, and none of them ovate, the flower is not nodding.

Haller characterizes his plant as having the bottom leaves cordate and ſerrate, the upper ones entire and hirſute. Villars his, with quite entire hirſute leaves, roundiſh lanceolate and linear. The latter thus deſcribes it. Stems three or four inches high, ſtraight, a little villoſe, with entire villoſe leaves, of a dark green colour; the lower ones almoſt round but pointed, diminiſhing in breadth inſenſibly as they are higher on the ſtem. At the top is one flower, which is ſtraight, with the ſegments of the corolla acute; it is a little larger than that of our common Bell-flower (n. 4.), ſomewhat longer and leſs open, accompanied by the diviſions of the calyx, which are lengthened out beyond the middle of it. Monſ. Villars thinks that this is the ſame with

[a] Linn. ſpec. Haller. Villars. [b] Hort. kew. [c] Linn. ſupp.

Haller's plant; but says that he has seen a specimen entirely smooth, with the segments of the calyx toothed, and the root-leaves oblong, which approaches nearer to the C. uniflora of Linneus than this which he has described.

This perhaps may vary as much as the fourth species, and we should not be surprised if a plant should put on a different appearance in the Alps of Lapland and of Dauphine.

3. Root filiform, creeping. Stems a short span in length, erect, flexuose, filiform, sometimes having a branch or two bearing a single flower. Root and stem-leaves ovate, obtuse, with a few distant notches, naked and petioled. Peduncle terminating. Flower drooping, the same size as in the next sort, with a smooth calyx. The variety has several flowers at the top of the stalk [a].

According to Scopoli, the leaves are notched; the lower ones roundish, blunt, not in the least cordate; the upper ones ovate-lanceolate, acuminate; the stems are slightly villose, usually one-flowered, sometimes branching. He asserts that the flowers are never drooping, but Linneus, Jacquin, and D'Asso affirm the contrary. The latter of these authors says, that the lower leaves are petioled, ovate, and notched, the upper linear and sessile. The flowers large and terminating. He remarks, that in Jacquin's figure some of the upper leaves are roundish. The corolla is of a very deep blue [b].

Native of the mountains of Austria, Carniola and Aragon.

4. Root perennial, creeping, sweetish. Stems several, a foot or more in height, varying from two inches to a yard, rather upright, but weak and crooked, round, smooth, solid, milky and branched. Radical leaves heart or kidney form, petioled, toothed (frequently quite entire); stem leaves near the base lanceolate and toothed, near the summit linear and entire. Flower-branches spreading, simple or subdivided, almost naked. Flowers nodding a little: corolla blue, sometimes white. Calyx permanent, segments linear, smooth, grooved, considerably expanded when out of blossom. Nectary at the bottom of the corolla, formed of five pointed valves closing and covering the receptacle; fringed, white. Capsule three-celled. The radical leaves, whence this plant has its name, are usually hid in the herbage, and therefore seldom observed: they also dry away and drop off, when it is advancing to maturity. It grows plentifully on heaths and other waste grounds, in dry hilly situations, flowering from june to september [c].

A green pigment is obtained from the flowers [d]. The juice stains blue, but with the addition of alum, green [e]. The stalks and branches, when broken, give out a milky juice, which has a disagreeable smell [f].

β. This variety has firmer and more shining leaves, the stem-leaves broader, serrate, the first rhomboidal, the rest elliptic, acute; the radical leaves are also more narrowly toothed. It is common in the Alps [g]. Ray also found it in the mountains of Stiria and Carinthia. With us it has been observed on Snowdon, and about Rickmansworth and Croydon.

γ. The other variety has the radical leaves roundish, roughish and serrate: the stems are hirsute; so are the stem-leaves; the first of these are serrate, most of them resemble the leaves of Flax. Peduncles an inch long, one-flowered hirsute; calyx villose, lanceolate; corolla wide, short, blue. In the valley of Urseren, and mountains about Aigle [h]; on mount Wasserfall. In Lapland, Denmark: and with us on the highest mountains of Wales and Westmorland, near Perth, and on Skiddaw, in Scotland.

Scopoli is of opinion that the *linifolia* (var. γ.) is a distinct species—1. because it does not produce several stems from the same root; 2. because it is twice or three times larger; 3. because it has much broader and larger flowers; 4. because it has no bottom cordate leaves, at least while it flowers, nor leaf-stems separate from the floriferous ones.

5. Root-leaves many together, spreading, small, roundish or oval, soon turning yellowish; those on the stems lanceolate, straight and even; not waved, as in C. Rapunculus. Panicle much more spreading than in that species, and fewer flowers. The herb though bitter being frequently eaten down by cattle, side branches spring up, and flower till the winter frosts destroy the root. Corolla of an elegant form, tapering at the base, but spreading in the rim. It has no resemblance to C. rotundifolia, for which it is sometimes mistaken, when the root-leaves are gone [i].

Native of Sweden, Denmark, Germany, Switzerland, Carniola, Piedmont; in corn fields, woods, hedges, and by road sides; flowering in july and august. In England it is not common. Merrett found it at Adlorton near Wigmore in Herefordshire; Littleton Brown found it in the same place: Dillenius in a wood called Elberry-hill, about a mile from Worcester, and near Bishop's Castle in Shropshire; Dr. Pulteney, by Buddon-wood, near Loughborough, and between Litchfield and Meriden: Mr. Nash, near Malvern: Mr. Woodward, near the Bath at Litchfield, and on the road to Coleshill: Dr. Smith, in the park of the late Lord Ligonier, at Cobham in Surry.

β. The variety, which Linneus thought a distinct species in the first edition of the *Flora fuecica*, and the *Species Plantarum* (C. decurrens), turned out not to be so, on sowing their seeds in a garden [k].

6. The whole plant is full of a milky juice. Root biennial, spindle-shaped, sometimes branching. Stem upright, angular, two feet high, hairy towards the base, smooth above: branches alternate, short, upright. Leaves towards the base of the stem hairy above or on both sides, blunt; the upper ones smooth, and becoming gradually more pointed; obscurely notched, teeth glandular, whitish, not projecting beyond the edge of the leaf. An awl-shaped bractæ at the base of each peduncle. Segments of the calyx awl-shaped, or setaceous, twice as long as the germ, with a small tooth on each side of the base. Flowers upright. Corolla blueish purple, sometimes very pale purple or whitish; each segment marked with three lines. Nectary fringed [l].

It grows wild in France, Flanders, Switzerland, Germany, Carniola, Piedmont; by hedge and road sides and woods; in fallow fields and dry pastures; flowering in june, july, and august. In England it has been found growing near Croydon and Esher in Surry; Old Buckenham Castle in Norfolk; about Hindlip and Enville in Worcestershire.]

The fleshy roots are eatable, and are much cultivated in France for salads. Some years past it was cultivated in the English gardens for the same purpose, but is now generally neglected. Haller says that it is in great request among the Swiss, in the spring; and that it increases milk. The roots are eaten not only raw in salads, but boiled like Asparagus [m]. They were boiled tender, and eaten cold with vinegar and pepper, in the time of Parkinson.

7. Root like that of Navew, and eatable. Stem very straight, eighteen inches high and more, (in gardens two feet and a half) unbranched, angular, smooth, as is the whole plant (except the germ and capsule). Flowers in a thin spike, one or two together, on very long peduncles, which have two stipules at the base. Corolla large, broad bell-form, deep blue, the segments short, and moderately acuminate [n].

This is a perennial plant, native of most parts of the continent of Europe from Sweden to Spain, but not of Britain. It was cultivated here by Gerarde, in 1596 [o].]

Varieties are, the single blue, and white; and double flowers of both colours. The latter have not been more than fifty years in England, but have

[a] Linn. spec. [b] With. [c] Jacquin. [d] Curtis. [e] Linn. succ. [f] Curtis. [g] Haller. [h] Ibid. [i] Engl. bot. [k] Linn. succ. [l] With. [m] Haller. [n] Stokes in With. [o] Hort. kew.

been propagated in ſuch plenty, as to have almoſt baniſhed thoſe with ſingle flowers from the gardens.

8. [Pyramidal or Steeple Bell-flower is thus deſcribed in its wild ſtate by Scopoli. The root and ſtem are milky; the latter is four feet high, panicled with ſhort branches from top to bottom. All the leaves are ovate, petioled, and ſhortly toothed; the teeth paler and terminated by a gland. The corolla ſpreading, five-cleft beyond the middle. The calycine teeth, even whilſt the corolla is cloſed, ſpreading out horizontally, and twice as long as the germ, which is three-cornered.

It is found about Idria, in Struk, *&c.* and, according to Allioni, in Savoy.

As it appears in the garden it is thus deſcribed by Miller.]

It has thick tuberous roots, which are milky; theſe ſend out three or four ſtrong, ſmooth, upright ſtalks, which riſe near four feet high, and are garniſhed with ſmooth oblong leaves, whoſe edges are a little indented. The lower leaves are much broader than thoſe on the ſtalks. The flowers are produced from the ſide of the ſtalks, and are regularly ſet on for more than half their length, forming a ſort of pyramid; theſe are large, open, and ſhaped like a bell. The moſt common colour of the flowers is a light blue; but there have been ſome with white flowers, which make a variety when intermixed with the blue, but the latter is moſt eſteemed.

This plant is cultivated to adorn halls, and to place before the chimnies in the ſummer, when it is in flower, for which purpoſe there is no plant more proper; for when the roots are ſtrong, they will ſend out four or five ſtalks, which will riſe as many feet high, and are garniſhed with flowers great part of their length. Theſe upright ſtalks ſend out ſome ſhort ſide branches, which are alſo adorned with flowers, ſo that by ſpreading the upright ſtalks to a flat frame compoſed of ſlender laths (as is uſually practiſed) the whole plant is formed into the ſhape of a fan, and will ſpread near the width of a common fire-place. When the flowers begin to open, the pots are removed into the rooms, where, being ſhaded from the ſun, and kept from the rain, the flowers will continue long in beauty; and if the pots are every night removed into a more airy ſituation, but not expoſed to heavy rains, the flowers will be fairer, and continue much longer in beauty.

[This alſo was cultivated in 1596, by Gerarde[a].

9. Root annual. Stem and germs ſmooth. Leaves acuminate. Flowers three or more from each axil or bracte. Corollas ſmall. Style longer than the corolla[b].

Native of Penſylvania. Introduced in 1763, by Mr. John Bartram. It flowers in july[c].

10. It is ſingular in this plant, that the ſtem, before it produces the panicle, puts out leaves in a kind of roſe, which, when the panicle comes forth, are diſperſed about the ſtem[d]. It varies much in the ſize and colour of the flower, quantity of branches, hardneſs and ſoftneſs, ſmoothneſs and roughneſs of the leaves.

It is found from the Jaick eaſtward to the very confines of China.

The roots are eaten by the inhabitants both raw and boiled[e].

It was introduced in 1784, by Monſ. Thouin, and flowers moſt part of the ſummer. It is perennial[f].

11. Root creeping, perennial. Stem erect, ſmooth, from ſix, eight or ten to eighteen inches in height, unbranched. Leaves few, tender, ſmooth, ending in a point; the upper ones ſmaller. Peduncles axillary, few-flowered, ſometimes one-flowered, ſome inches long, forming a thin ſpike, all directed to one ſide. Corollas blue, ſometimes white, ſhort and ſwelling. Calyx capillary[g].

Native of the mountains of Switzerland, Dauphiné, Carniola, and Italy on Mont Cenis.

Introduced in 1775, by Doctors Pitcairn and Fothergill. It flowers in july[h].

[a] Hort. kew. [b] Linn. mant. [c] Hort. kew. [d] Linn. [e] Gmelin. [f] Hort. kew. [g] Haller. [h] Hort. kew.

9. The variety obſerved by Alpinus near Baſſano, and by Arduini on monte Somma and other mountains of Italy, has the leaves very much acuminated, and the ſerratures diſtant; the flowers are in a nodding raceme: the leaflets of the calyx have often two acuminate ſerratures on each ſide: the piſtil is longer than the corolla[a].

12. Stems extremely ſimple: the leaves have one ſerrature on each ſide.

13. This and the foregoing ſort were found at the Cape of Good Hope by Thunberg.

14. Differs from the *capillacea* in having hiſpid capſules, and the calyx the length of the corolla.—Found alſo at the Cape by Thunberg.

15. This ſpecies has the air of a *Lobelia*, the ſame tenderneſs, divided in the ſame manner, and even the ſame inflorescence. Perianth three or five-leaved, leaflets ovate, obtuſe, permanent: corollas very ſmall, purpliſh-white, twice as long as the calyx, funnel-form, tube round, gradually widened, ſegments erect. It varies with the calyx and corolla three and five-parted, and even with three and five ſtamens: the capſule alſo is two-celled[b]. Native of Madeira; found there by Mr. Francis Maſſon. Introduced in 1777. It flowers in july and auguſt[c].

16. This pours out a milky juice when wounded. The root is whitiſh and perennial. Stems herbaceous, annual, weak, hardly branching, bearing one or very few flowers. In gardens it becomes branching and many-flowered. The root-leaves are kidney-form roundiſh; the peduncle elongated and ſmooth; the corolla blue. It flowers the whole ſummer, and was firſt obſerved on the Carpathian alps by Fr. Joſ. Lipp[d]. It was introduced in 1774, by Joſ. Nich. de Jacquin, M. D.[e]

It is obſerved by Mr. Curtis, that it is yet ſcarce in our gardens, but deſerves to be more generally known and cultivated; its flowers in proportion to the plant, being large and ſhowy; and, like many other Alpine plants, being well ſuited to decorate rock-work, or ſuch borders of the flower-garden as are not adapted to large plants.

17. The whole plant is very ſmooth. Root perennial white, fuſiform, the thickneſs of a finger and branched. Stems few, erect or aſcending, ſimple, round, a foot high, leafy all over, annual, terminated with one handſome flower, but without ſcent, nodding a little; with ſometimes one or two flowers more from the upper axillas. Leaves irregularly ſcattered, ſeſſile or on very ſhort petioles, ovate or ſublanceolate, ſhort and ſharply ſerrate: ſometimes a few of the leaves, and at others all of them are in threes. Corolla two inches in diameter or more, very deep blue with numerous blue veins; elegantly pear-ſhaped before expanding, and at firſt green. No holes in the capſule. It flowers in june and the beginning of july, and ripens its ſeeds in auguſt[f].

The flowers being of the ſame form as in the foregoing ſort, it is doubted in the ſupplement of Linneus whether it be any thing more than a variety of it; but the leaves are never cordate.

Native of Siberia. Introduced in 1782, by Mr. John Bell. It flowers in july[g].

18. Stems panicled, growing cloſe to the rocks. Leaves lanceolate, ſmooth. Calyx ſuperior, coloured. Tube of the corolla diſtant from the calyx; ſegments linear, reflex. Diſcovered in the iſland of Madeira by Maſſon[h]. Introduced in 1777. It flowers in auguſt and ſeptember[i].

19. This very much reſembles *Lobelia tenella*. Stem determinately branched and hard: branches ſimple, and covered with leaflets. Leaves alternate, rather crowded, ſeſſile, minute, ſubimbricate, gloſſy, obtuſe, channelled; in the boſom of theſe are ſmall leaflets, much reſembling them, which are a kind of rudiments of ſmall branches. Peduncles from the top of the branches, one-flowered, lateral, longer

[a] Linn. ſpec. [b] Linn. ſuppl. [c] Hort. kew. [d] Jacquin. [e] Hort. kew. [f] Jacquin. [g] Hort. kew. [h] Suppl. [i] Hort. kew.

than

than the leaves. Calyx glossy, acute. Corolla five-parted. The leaves are seldom without a lateral tooth. Found at the Cape, by Thunberg [m].

20. This is a plant difficult to be distinguished, unless by the pores, scarcely distinguishable by the naked eye, which penetrate into the stem, not downwards but upwards. Stem round, a foot high, erect; branches numerous, erect, short. The upper leaves linear, even, quite entire. Racemes terminal, erect. Flowers small, less than those of n. 4., rather erect. Calyx shorter by half than the corolla, even; with lanceolate segments [n].

21. Stem a foot and half high, erect, filiform, glossy, somewhat branched at top. Leaves sessile, reflected at the edge, subdecurrent, repand, somewhat glossy. Peduncles terminal, long, leafless. Flowers the size of the fourth species. Calyx glossy, with short, acuminate teeth. Thunberg discovered these two at the Cape [o].

22. Stem three feet high and more, angular, smooth, not branching. Leaves sharply serrate, on short petioles, hirsute. Flowers axillary, one or two together, on pedúncles shorter than the leaf. Calyx smooth, with broad triangular segments. Corolla very large, blue, the segments triangular, divided by a line. The fruit obliges the peduncle to bend down with its weight. Oeder has very well expressed the coalescing claws of the stamens [p].—The peduncles have two subulate bractes about the middle. The segments of the calyx are a little serrate. Corolla oblong-ovate, with five angles; the segments shallow. Nectary fleshy, purplish, woolly. Anther woolly, twice as long as the filaments. The whole plant abounds with a milky liquor [q]. It varies with purple, and with white flowers. It grows naturally in the northern parts of England, in Flintshire, Scotland, Denmark, Sweden, Switzerland, Piedmont, &c. flowering in july and august; and is perennial.

Johnson says that it was kept by Gerarde in his garden, as also by Parkinson in his: but that he found it in the year 1626 in great plenty, upon the banks of the river Ouse in Yorkshire, as he went from York to visit Selby, the place where he was born.

23. This is in many respects like *C. Trachelium* (n. 28.): the lower leaves are on long petioles and serrate; the upper ones stem-clasping: the stem is simple, or only branched at top. But the whole is more soft: the stem purple, smooth, slightly hairy: flowers from the axillas, solitary, on long peduncles, large, nodding all one way in a spike at the top of the stalk. The throat of the corolla is not very hairy. The root creeps prodigiously, and is said to be esculent. M. De Saussure found a variety with leafy spikes [r].

Native of France, Germany, Austria, Switzerland, Piedmont, &c. Ray remarked it about Geneva, towards Gex, and on Mont Saleve. It affects a dry soil, and flowers in july and august. Perennial. Cultivated 1683, by Mr. James Sutherland [s].

24. The stem has the air of *Verbascum nigrum*. Leaves stem-clasping, lanceolate, serrate. Flowers in a very long thyrse: peduncles generally three-flowered [t]. Root large, woody, like that of Navew. Stem three feet high and more, erect, with many ascending, conjugate branches. Leaves stem-clasping, almost cordate, villose with a white nap beneath, but not rough, moderately serrate; the same under the flowers, which come out on almost naked branches, and at the top of the stem, the lower ones on erect, short peduncles, three together, the upper ones sessile in the axillas solitary or two together, at the top of the stem very numerous but small, forming a spike. They are of a violet colour. Calyx hairy, with lanceolate segments. Tube of the corolla angular, brim not entirely semiquinquefid; segments lanceolate, divided by a line. Filaments and pistil hairy [u]. Stem round. Nerves of the leaves underneath pubescent with ferruginous wool. Flowers in a long, stiff, panicle. Peduncles three to five-flowered; the upper one-flowered. Calycine segments erect, double the length of the germ [x]. It has the appearance, according to Scopoli, of *C. pyramidalis*. Native of Bologna, monte Baldo, Austria, Switzerland, Piedmont. Perennial. Introduced 1773, by John Earl of Bute [y].

25. Like *Phyteuma hemisphærica*, but larger. Root of many tufts. Leaves very narrow like Grass, ciliate at the base; stem-leaves almost stem-clasping, and presently subulate. Stems extremely simple, scarcely longer than the leaves. Flowers fascicled into a head, with ovate bractes subulate at top. Stigma bifid [z]. Native of Italy, in the mountains of Abruzzo near Salmone, and monte Vergine.

26. Found at the Cape by Thunberg.

27. Stem branching, a hand high, and hispid, more branching at top. Leaves alternate, linear, acuminate, ciliate, especially the midrib. Calyxes subsessile, terminal, linear, with the keel ciliate. Corolla funnel-form. Stigma trifid. Annual. Observed at the Cape by Sparrman [a].

28. Root perennial. Stems from two to three feet in height, upright, stiff, hairy, angular, the angles membranaceous, putting out a few short side branches. Leaves resembling those of the great Nettle, but rather shorter and broader, alternate, ovate, cordate, pointed, hairy, deeply toothed, sometimes having two or three lobes: petioled, except the upper ones, which are sessile. Peduncles alternate, axillary, trifid and three-flowered. The number of flowers however varies from one or two to three, four and even five. They are large and nodding. Bractes oblong, serrate. Calyx angular, acute, hispid. Corolla pale or deep blue, purple or white, spreading very much, hairy within, the segments triangular, divided by a hairy line. Capsule villose, rugged, three-celled, and perforated by three holes. When the corolla is double, there are no stamens or nectary. The whole plant contains a juice of a dirty yellow colour. Besides the common varieties, Haller mentions a monstrous one, with the corolla and calyx imperfect, and the leaves collected into a head [b].

Native of most parts of Europe, and of Japan, in woods and hedges; flowering in july and august.

29. Root perennial. Stem upright, angular, hairy, commonly somewhat rugged, but sometimes smooth, from six to eighteen inches in height but varying from two and even three feet in strong soils, down to two inches in lofty dry situations; seldom or ever branched, unless when it is eaten down by cattle. The bottom leaves are cordate-oblong, on long winged petioles; the upper ones are lanceolate and sessile or half-stem-clasping; all serrate, rough, pale but not hoary underneath, commonly blunt, sometimes rather acutely pointed. From the axils, towards the upper part of the stalk come out long naked peduncles, supporting two or three flowers, closely joined together, and the main stem is terminated by a larger cluster of five or six of the same flowers; except when the plant is dwarfish, and then it has sometimes one flower only. Bractes ovate-lanceolate. Calyx hirsute. Corolla blue, purple, or white, five-cleft to the middle (sometimes four-cleft), usually villose on the inside, and sometimes on the outside, with white hairs. Anthers slender, sulphur-coloured. Stigma blunt. Style white or blue, pubescent. Capsule three-celled, with three holes [c].

Native of most parts of Europe, in hilly and dry pastures, particularly in a calcareous soil; flowering from june to september.

This plant is no contemptible ornament for rock-work or dry flower borders. A moist or rich soil makes it too luxuriant, and renders the flowers pale and degenerate [d].

β. The alpine variety has handsomer, larger flowers [e].

[m] Suppl. [n] Ibid. [o] Ibid. [p] Haller. [q] Withering. [r] Haller. [s] Hort. kew. [t] Linn. mant. [u] Haller.

[x] Scopoli. [y] Hort. kew. [z] Linn. syst. [a] Linn. suppl. [b] Linn. With. Lyons in Relh. Haller. [c] Relhan. Engl. bot. Woodw. in With. Krock. Linn. [d] Engl. bot. [e] Hallee.

30. This resembles the foregoing; but the root is biennial, the whole plant is more rugged and hispid, the stems are higher, the leaves much narrower, the flowers smaller, less open, and a little villose on the outside. It is also a wood plant, whereas the other grows in open situations[f].

Native of Sweden, Denmark, Germany, Switzerland, Piedmont, Siberia; flowering in july and auguſt. The root is eſculent. Introduced in 1783, by William Pitcairn, M. D.[g].

31. Root large, woody, biennial; from which riſes a round tuft of rough broad ovate-lanceolate leaves, as in the Sedums. From the centre of theſe ſprings a ſtem eight or ten inches high, unbranched, covered with leaves and flowers; the leaves tongue-ſhaped, longer than the radical ones, equal to the whole ſtem; the flowers hirſute, white or yellowiſh white, long and ſlender, collected into one very long ovate-cylindric cloſe terminating ſpike, leafy at bottom but naked at top[h]. Sometimes the corolla is cut into four or ſix parts, and then there is a proportional number of ſtamens and two ſtigmas[i].

In Switzerland it is common in ſtony alpine meadows; on the lower mountains it is more rare. It was obſerved by Ray to grow plentifully on the higheſt tops of Jura. It is alſo a native of Germany, Hungary, Auſtria, Carniola, Savoy, and Dauphiné. It was introduced in 1785, by William Pitcairn, M. D. and flowers in july[k].

32. Stem upright, rough, hairy, from a foot to two feet in height, beſet with flowers from the top to below the middle, in alternate diſtinct bunches, with a leaf between each. The lower leaves are petioled, the reſt are ſeſſile; they are all blunt iſh, ſerrate, rugged on the upper ſurface, white with nap on the under. Corolla white[l], divided into five (ſometimes ſeven) ſharp ſpreading ſegments, twirling at the extremity[m].

It was firſt obſerved by Pona on montr Baldo, flowering in auguſt. It is a native alſo of Piedmont, Sileſia, *&c.*

33. Leaves oblong, rugged. Flowers ſolitary from the forks and ends of the branches, of the ſame ſtructure as in *C. Medium*, but only half the ſize; they are twice as large however as in *C. ſibirica*[n].

34. Root biennial. Leaves oblong, rough, hairy, ſerrate, coming out without order from the root, narrowing into a petiole. From the centre of theſe the ſecond ſeaſon, ariſes a ſtiff, hairy, furrowed ſtalk, about two feet high, ſending out ſeveral lateral branches, with long, narrow, hairy, ſerrate, ſeſſile leaves, placed alternately. From the ſetting on of theſe leaves come out the peduncles, thoſe on the lower part of the ſtem and branches four or five inches long, diminiſhing gradually in length upwards, and thus forming a ſort of pyramid. The flowers are very large, and make a fine appearance; they are ſmooth, and the ſegments turn back at the end: they come out the beginning of june, and if the ſeaſon be not very hot, will continue a month in beauty. The ſeeds ripen in ſeptember, and the plants decay ſoon after.

It grows naturally in the woods of Germany, Auſtria, and Italy; and is cultivated in the Engliſh gardens for the beauty of its flowers, of which there are the following varieties: blue, purple, white, ſtriped, and double: but the two laſt are not very common in England.

[It was cultivated here in 1597[o].

35. Root perennial, (according to ſome, biennial) white, large, and woody, fuſiform or rather tuberous, two, three or more inches in length. The whole of the plant is villoſe. Root-leaves many (five to ten), oblong-lanceolate or tongue-ſhaped, blunt iſh, obſcurely crenulate, ſomewhat rugged, from two to three inches long and upwards, narrowing into flat petioles. From theſe ariſes a ſimple upright round ſtem, from ſix to eighteen inches in height, with very few ſeſſile leaves on it; and towards the top from three or four to five or ſix, and ſometimes ten or eleven flowers, forming a kind of looſe ſpike; they are large, ſolitary, nodding, alternate, and commonly all directed one way: the lower ones are on long peduncles, and the upper flowers on very ſhort ones. Corolla pale blue (ſometimes white), ſmooth iſh on the outſide, but within bearded with long white hairs. Calyx hiſpid with white hairs, covered in part with ears or appendicles turning downwards from the origin of its diviſions[p]. According to Haller, the fruit is five-angled, and has five obſcure grooves, but is three-celled.

Native of the mountains of Italy, Auſtria, Switzerland, Dauphiné, and Sileſia.

Introduced in 1775, by Doctor Pitcairn and Fothergill. It flowers in june and july[q].

According to the obſervations of Scopoli, it varies: 1. With one flower; the ſtem ſcarcely ſix inches high; the leaves entire; the calyx villoſe, only half the length of the corolla, deeply five-cleft, appendicled. This is the one-flowered variety of Haller, mentioned by Caſpar Bauhin (prodr. 37.) to be found by Burſer on the alps. 2. With two flowers. 3. With three flowers, the ſtem a foot high, and the leaves unequally notchletted. 4. With four flowers or more; well figured by Jacquin (Obſ. bot. 2. t. 37.), with many flowers on a ſtem.

36. Root biennial, the thickneſs of a finger, two or three inches long, fuſiform. Root-leaves linear-lanceolate, quite entire, rough, hairy: ſtem-leaves like them, but ſhorter and narrower. Stem a foot high (Krocker ſays, four, five, or ſix feet; according to Haller, very high), with white ſtiff hairs, like all other parts of the plant, and alternate branches, terminating in a very long looſe ſpike of many ſeſſile, alternate, remote flowers. Calyx hoary with white hairs. Corolla ſmall in compariſon of the plant, ſubcylindric, blue[r].

Haller obſerves, that it reſembles *C. Cervicaria* (n. 30.) ſo much, that it may ſeem doubtful whether it be really diſtinct, but that it is however probably a different ſpecies. The flowers, he ſays, are not in a few whorls, but one or two in each axil from top to bottom, within a boat-ſhaped leaf; the calyxes and bractes are wholly white with hairs; and the top of the ſtalk ends, not in a white umbel of flowers, but in a narrow point.

Theſe long ſpikes of flowers bear ſo much reſemblance to thoſe of *Echium*, that Monſ. Villars would have this ſpecies named *Campanula echioides*.

Allioni remarks, that it puts on a variety of appearances in very dry open ſituations at the foot of the Alps; where it has very rough linear leaves, with a curled waving edge, and flowers in a very long cloſe continued ſpike. In the county of Nice it has elliptic leaves, not curled about the edge, with flowers in an interrupted ſpike. But it has more uſually linear leaves, and flowers, though in a ſpike, yet interrupted, ſo as to form lateral heads, as it is repreſented by John Bauhin.

It is common both in the Upper and Lower *Valais*, about Chiavenna, and by the Lago Maggiore and Como, in the vineyards. Between Pignerolles and la Peroſa, and in the whole valley of Feneſtrelles, very common in dry open rocky ſituations. In Alſace between Sultz and Zenne. In Dauphiné, but not common. In Sileſia. It flowers in july. Introduced in 1786, by William Pitcairn, M. D.[s]

37. Root perennial, fuſiform. Stem abſolutely ſimple, ſmooth, a ſpan high, loaded the whole length with axillary, ſolitary flowers. Root-leaves oblong, lanceolate, blunt, growing wider towards the top, hirſute, entire: ſtem-leaves ligulate, ſmaller, ſeſſile. Peduncles upright, very long, with two bractes. Valves of the nectary ſemiovate, blue. Germ blue, three-cornered, ſemiovate, faſtened by its baſe to the bottom of the calyx; ſtigma trifid. Capſule

[f] Villars, Allioni, Linn. [g] Hort. kew. [h] Haller. [i] Villars. [k] Hort. kew, 3. 486. [l] Krocker. [m] Seguier. [n] Linn. amoen. [o] Hort. kew. from Ger. [p] Krocker, Scop. Haller. [q] Hort, kew. [r] Linn. Kneck. [s] Hort, kew.



roundiſh,

roundiſh, three-celled. Seeds browniſh, with a membranaceous edge [a].

Haller obſerves, that it much reſembles the *barbata* (n. 35.); that the ſtem however is ſcarcely nine inches high and ſmooth, producing one peduncle from each axil, with two narrow leaves and only one flower, which is nodding, ſhorter, wide, ſmooth and pale blue: calyx blue at the baſe, with five darker ſpurs, hairy, and the ſegments triangular.

On Schneeberg, Scheidegg, *&c.* alſo in Sileſia; flowering in july.

38. Stems decumbent, with few branches, rather ſtiff, villoſe. Leaves ſmall, ſeſſile, nearly entire, tomentoſe, pubeſcent. Flowers from the axils ſolitary, on long peduncles, ſix times as big as the leaves: calyxes large, naked, with reflex ſinuſes. In ſhort, it has the herb of *Antirrhinum molle*, the flowers of *Campanula Medium*, and the ſtature of *Campanula bterophylla* [b].

Native of Syria, Sicily, and Spain.]

39. The ſtalks riſe a foot high; the flowers are large, blue, nodding, alternate; they open in july, and are ſucceeded by five-celled capſules, filled with ſmall ſeeds. It grows naturally in Crete, upon rocks, where the roots penetrate the fiſſures, and the plants continue much longer than in gardens.

[Cultivated by Mr. Miller in 1768.

40. Root biennial. Stem a foot high, angular, a little hiſpid, ſtraight, undivided. Panicle thin, looſe. Leaves linear, half-ſtem-claſping; ſtem-leaves rugged. Flowers oblong, ſmall: peduncles generally three-flowered: calyxes hiſpid. There is a variety, with a ſubdivided ſtem, and broader leaves. Native of Siberia, Auſtria [c], and Piedmont. Introduced in 1783, by William Pitcairn, M. D. It flowers from july to ſeptember [d].

41. This has the root-leaves of *Statice reticulata*, lanceolate, wedge-form, having frequently three teeth at the end. Stem twice as long as the leaves, with ſome linear leaves on it. Flowers upright, rather large, ſolitary. Found in the Levant by Tournefort.

42. Root biennial. Stem two feet high, ſuffruticoſe, branched from the bottom. Lower leaves eight inches long and two inches and a half wide; thoſe on the branches two or three inches long and ſeſſile; the uppermoſt only four or five lines in length, ſlightly crenated and pointed. Flowers large, pale blue. Capſule five-celled, nine or ten lines in diameter. Found by Tournefort in the iſland of Policandro, and cultivated in the Paris garden from ſeeds ſent by him [e].

43. Stem eighteen inches high, rough with hairs. Root-leaves cordate or ovate, ſomewhat oblong, ſerrate, rough with hairs on both ſides, petioled: ſtem-leaves alternate, remote, ſeſſile, obtuſe, ſerrate-toothed, rough with hairs, narrower at the baſe. Flowers axillary, ſolitary, erect. Calyxes rough with hairs, covering the germ with their ſinuſes. Native of Syria and Paleſtine [f].

44. This is now made a diſtinct genus, under the name of *Canarina*.

45. This is ſhrubby, and a native of the Cape of Good Hope. It was introduced in 1787, by Mr. Francis Maſſon, and flowers here in auguſt [g].]

46. *Venus's Looking-glaſs* is an annual plant, which riſes with ſlender ſtalks a foot high. The flowers are of a beautiful purple, inclining to a violet colour, (ſometimes pale purple or white) and in the evening fold up into a pentagon figure, whence it is called *Viola pentagonia*. The calyx is compoſed of five narrow leaves, which ſpread open, turn back, and are much longer than the petals: theſe remain on the top of the priſmatic ſeed-veſſel, which is filled with ſmall angular ſeeds.

[The ſtem is tender, quadrangular, naturally procumbent, branched from the bottom at very great angles. Leaves ſeſſile, obovate, waved about the edge. Flowers axillary, erect, on very long peduncles. Corolla wheel-ſhaped, and ſo deeply five-cleft, that the ſegments, which are ovate, ſcarcely cohere. The filaments are not united by their claws. The capſule is longer and narrower than in the generality of the ſpecies; the ſeeds are ovate and ſhining [a].

Native of moſt of the ſouthern countries of Europe, among corn. It flowers from may to ſeptember.

Some authors make two ſpecies of this: one larger, which is Moriſon's Campanula five Pentagonia ſolio oblongo latiori; and another ſmaller, which is Campanula arvenſis minima of the ſame author; though he ſays that this grows wild in England, which muſt be a miſtake.

Johnſon on Gerarde, ſays that he had only ſeen ſome branches of it brought from Leyden, by his friend Mr. William Parker. It was cultivated in 1683, by Mr. James Sutherland [b].

47. This is alſo an annual plant. It differs from the foregoing in having the ſtem upright; it is very ſtiff and ſtraight, and ſcarcely ever branches any where but at bottom. The flowers are ſeſſile, three or four together, much ſmaller than in the other: the coroſlas frequently lurking in the rudiment and not unfolding [c]. To this we may add, that the ſegments of the calyx are broader, being oval-lanceolate, whereas in that they are ſubulate: it is permanent, crowning the ripe capſule [d].

Linnæus ſuppoſes this to be a hybridous or mule plant, and the foregoing ſpecies to be the mother of it. The Engliſh name of Venus's Looking-glaſs, which is applied to both, is derived from the ſhining ſmoothneſs of the ſeeds. Our wild ſpecies is well deſcribed, and not ill figured by Johnſon in Gerarde. It is common in corn fields, in England, France, Switzerland, *&c.* flowering in june and july.

Haller has a larger and ſmaller variety of this alſo. To the firſt he gives the ſynonyms of Lobel and Tabernæmontanus; to the ſecond thoſe of Linnæus and Moriſon, C. arvenſis minima erecta, *hiſt. oxon.* n. 22.

48. Root-leaves petioled, but not rigid. Stem with very ſimple, wand-like branches, and linear or ſubulate leaves. Flowers remote, axillary, with bractes the length of the germ. Native of the Levant [e].

49. This is a ſmall plant, a hand or not more than ſix inches in height, with a ſimple white root. The ſtem is ſlender, weak, ſhrubby with frequent branches. Leaves a finger's length, narrow, the breadth only one third of the length, ſeſſile; the lower ones broader, reſembling thoſe of Gratiola and Hyſſop, the upper ones narrower and ſharp. Flowers at the ends of the ſtem and branches, twice as large as in C. Speculum Veneris, and of a paler purple, the bottom or eye white, but leſs ſo than in that; a broad blue band ſurrounds the eye, and the edges are purple. The flowers are more concave and bell-ſhaped than in our common garden ſort, and the ſegments are not ſo deeply cut. The leaflets of the calyx are narrow, oblong, ſharp, ſpreading but not revolute, and ſometimes have little briſtles at the edges. The flowers before they open are folded up, like the other ſorts, and have five wings like the feathers of a ſhaft; and hence the name *Pentagonia*; they ſit upon a ſquare oblong capſule, at the baſe of which are two oppoſite leaves; and from the axils of the leaves come out two branchlets. The ſeeds are round, large, and ſhining [f].

Linnæus ſays, that with him the flowers were generally mutilated or imperfect.

Ray cultivated this plant before the year 1686. He informs us, that the ſeed was collected in Thrace by Mr. Covill of Cambridge, and that it was given to him by his old friend Mr. Dent, an apothecary and excellent botaniſt there.]

50. This is an annual plant, which in good ground, will riſe a foot and half high, but in poor ground, or where it grows wild among corn, ſcarcely

[a] Krock. Lipſ. [b] Linn. ſpec. [c] Linn. [d] Hort. kew. [e] Tourn. voy. [f] Linn. [g] Hort. kew.

[a] Haller. [b] Hort. kew. [c] Linn. ſpec. [d] Linn. ſpec. [e] Ray hiſt. [f] Withering.

riſes to the height of ſix inches. The ſtalk is ſingle, rarely putting out any branches, unleſs near the root, whence ſometimes one or two ſhort lateral branches are produced. The leaves are roundiſh and ſtem-claſping, ſharply ſerrate at the edge, and from their baſe comes out a cloſe tuft of flowers, ſurrounded with a leaf as with the calyx. The flowers are five-cornered and ſhaped like thoſe of C. Speculum Veneris, but much ſmaller; they are produced the whole length of the ſtalk.

[Linneus obſerves, that it is very diſtinct from its congeners; the ſtem being commonly upright without branches; the leaves cordate, crenate, alternate; flowers three, commonly ſeſſile, within each axil; all, except the terminating one, generally mutilate[t].

Ray remarks, that the ſimple woolly angular ſtem is higher than that of C. Speculum Veneris and Pentagonia, being a long ſpan or about nine inches in height; that the leaves on the ſtem are frequent, an inch broad and roundiſh; that there are commonly three flowers, ſeldom four, from each axil, not ſpreading ſo much as in C. Speculum Veneris, but with rounder ſegments, and of a paler colour: the ſegments of the calyx are broader; and the ſtem ſometimes puts forth branches.

Native of North America. Cultivated in 1680; and flowers in june[b].

51. Root annual. Stem round. Leaves long-pointed. Branchlets from the axils generally ſimple. Stem, leaves and calyx hirſute. Pedunele ſometimes a foot long. Corolla blue. Capſule three-celled. Native of the Cape of Good Hope; flowers in auguſt and ſeptember, ripens its ſeeds in october, and then dies[k].

52. Root perennial. Stems many, procumbent, round, generally ſimple, from the fiſſures of rocks. Leaves alternate, petioles longer than the leaves in the bottom ones, but ſucceſſively ſhorter up the ſtem, cordate, acuminate, aſh-coloured, but paler beneath. Racemes three or four-flowered, axillary; ſometimes in the lower ones branched, but uſually ſimple. Flowers purple, half-five-cleft, the ſegments lanceolate, revolute. Calyx half-five-cleft, ſpreading; the ſegments not appendicled. All the flowers except the extreme one have a linear bracte. An axillary raceme terminates the ſtalk. The whole plant is pubeſcent with ſoft hairs, and is very milky. At the foot of the Alps, in the country of the Valdenſes or Vaudois, in rocky, ſhady ſituations[m].

53. Root perennial, fibrous, ſlender, creeping. Stems procumbent, filiform, trailing, matted together, and covering ſpots of a foot diameter. The whole herb pale, tender, delicate, and ſmooth, except a very few ſcattered hairs occaſionally found on ſome of the leaves; the lower of which are heart or kidney-form, and nearly entire. Peduncles long, filiform, ſolitary, either terminating or axillary. Segments of the calyx pointed and entire. Corolla pale blue, ſlender, oblong. Filaments longer than the anthers[n].

Linneus has a ſuſpicion that this is a hybrid plant, produced from one of the Campanulas impregnated by *Veronica hederifolia*. The reaſon he gives is, that the leaves are quite foreign to thoſe of others in this genus; yet ſurely they reſemble much more the root-leaves of *Camp. rotundifolia* than thoſe of *V. hederifolia*[o].

Native of England and Wales, Denmark, France, and Spain, in moiſt ſhady places. It was firſt diſcovered to grow in this country, ſays Johnſon in Gerarde, by Mr. George Bowles in 1632, who found it in Montgomeryſhire; in Cornwall and Devonſhire it is common. In Bagley-wood near Oxford. Near Baly, Maresfield, *&c.* in Suſſex; near Sheffield and Halifax in Yorkſhire. And on Epping Foreſt. Said to be common in the weſtern counties and many parts of Wales. It flowers from may to auguſt.

54. See *Lobelia Erinus*.

55. Root perennial, white, ſweet, and full of milk. Lower leaves like thoſe of the Daiſy, diſpoſed in a ring, brownish green, ſhining, two inches and a half long, and half an inch wide: thoſe on the ſtem are more like thoſe of *Nummularia*, fleſhy, ſmooth, bright green, eight or nine lines in length, terminating inſenſibly in a point, on a very ſhort petiole, frequent, alternate. Stems eight or nine inches long, a line in thickneſs, milky, and full of white pith. Flowers axillary, ſeven or eight lines long, and four or five wide, pale blue. Calyx five lines in length, and three in width, pale green. Fruit three-celled, filled with brownish red, poliſhed, oval ſeeds, the third of a line in length. The whole plant is inſipid[p].

According to Linneus, the leaves are obovate, pubeſcent, waved at the end; the ſtem branches alternately; and the flowers pendulous[q].

Native of the Levant. Found by Tournefort in the deſert iſle of Cheiro.

56. This is a low annual plant, ſeldom riſing ſix inches high, but dividing into many branches. [Root white, ſimple, with few fibres. Leaves alternate, but where the branches come out two oppoſite, very deeply toothed. Flowers ſmall, pale blue[r].] They are produced at the ends of the branches, are ſhaped like thoſe of C. Speculum Veneris, but their colours are leſs beautiful, and the leaflets of the calyx are broader.

[Villars remarks, that the whole plant is villoſe, and that it has rather the air of an annual Veronica than of a Campanula: it agrees however, as Linneus obſerves, in all reſpects with the Campanulas.

Native of Spain and Portugal, Italy, Sicily, and the South of France. Moriſon obſerved it in Poitou near Rochelle; Ray about Montpellier and Meſſina; Villars near Vienne, Valence, Montelimar, *&c.*; Allioni in the county of Nice; and Loefling at Oporto and St. Ybes. It was cultivated by Mr. Miller in 1768; and flowers in july and auguſt[s].

57, 58, 59, 60. Theſe were found at the Cape of Good Hope by Thunberg[t].

61. Root perennial. Stems many, ſtraight. Leaves in fives or ſixes, lanceolate, ſerrate. Whorls of flowers uſually five, very remote; peduncles ſomewhat branching, with a linear upright ſtipule at the baſe. Calyxes ſmall, ſimple; the ſegments briſtle-ſhaped; corollas ſmall, pale blue; ſtyle double the length of the corolla. Native of Siberia; flowering in june[u]. Introduced in 1783, by Mr. John Bell[x].

62. This is a tender plant, found in moiſt places, near the Cape of Good Hope by Thunberg[y].

63. Root fuſiform. Stem herbaceous erect, the whole ſmooth. Leaves ſeſſile, acute, entire, reflected at the edge, expanding, ſmooth, an inch long. Flowers axillary, peduncled. Peduncles capillary, one-flowered, ſeldom divided, three times the length of the leaves. It flowers in ſeptember[z].

64. Stem obſcurely angular, jointed, ſmooth, ſimple at bottom, panicled at top, two feet high. Branches four, oppoſite and alternate, wand-like, diffuſed, obſcurely four-cornered, floriferous, ſmooth; the upper ones ſhorter, capillary. Leaves ſeſſile, attenuated towards the baſe, acute; green above, pale beneath with the midrib raiſed; ſmooth, erect, an inch or more long, the length of the internodes. Flowers on the branches racemed, drooping. Bractes ſetaceous, ſmooth. Racemes many-flowered, on capillary peduncles, half an inch in length. Perianth permanent, decurrent. Corolla whitiſh. Anthers linear. Style double the length of the corolla: ſtigma trifid[a].

65. Stem underſhrubby, ſmooth, erect, two feet high. Branches very angular, flexuoſe, erect, ſubfaſtigiate, ſmooth. Leaves ſcattered, acute, ſerratures argute, the edge a little reflected; above green, beneath glaucous, ſcabrous, netted; the lower ones larger, expanding; the upper gradually leſs, erect, about an inch in length. Flowers axil-

[t] Spec. and hort. cliff. [k] Hort. kew. [l] Commelin. [m] Allioni. [n] Engl. bot. With. Ray. [o] Engl. bot.

[p] Tournef. voy. du Levant. [q] Syſt. [r] Ray. [s] Hort. kew. [t] Linn. ſuppl. [u] Pallas. [x] Hort. kew. 3. 486. [y] Linn. ſuppl. [z] Thunb. [a] Ibid.

lary on the tops of the branches. Peduncles erect, bracted, an inch long. Bractes one or two on a peduncle, alternate, lanceolate, reſembling the leaves. Calyx ſubangular, glaucous; diviſions lanceolate, reflex. Corolla large, blue. It flowers in july and auguſt; and is cultivated in Japan.

66. Stem thick at the baſe, rather woody, decumbent. Branches very many, capillary, rather erect, with a very few ſubdiviſions, ſtriated, ſmooth, a ſhort ſpan in length. Leaves on the lower part of the branches ſeſſile, alternate, white-edged, ſerrature remote, hiſpid with white hairs, half an inch long.—By road ſides; flowering in may and june[b].

Theſe four were diſcovered in Japan by Thunberg.

67. Native of New Zealand and New Caledonia[c].

68. This very elegant Campanula has a few leaves at the bottom, rather erect, on petioles the length of the leaves, and grooved within. The leaves are drawn to a point at each end, have on each ſide two or three ſharpiſh teeth, are of a deep green, roughiſh, rather firm and not juicy. The little ſtem is erect, rather firm, round, ſmooth, half a finger high. Flower erect: calyx ſmooth, five-cleft beyond the middle, the ſegments lanceolate-linear, not reflected, nor expanded, nor appendicled. Corolla blue.

Native of Piedmont. Perennial[d].

69. Radical leaves very many, petioled, decurrent, acute, ſhortly toothed or rather notched, nerved beneath, finely and thinly haired ſo as to ſeem almoſt ſmooth. Stem round, a ſhort ſpan in height. Calyx livid, five-cleft beyond the middle; ſegments lanceolate, not reflex. Corolla ſpreading. Native of Piedmont. Perennial[e].

70. Many ſtems and ſhoots form a tuft. The ſhoots have only ovate, acuminate, toothed, petioled leaves; they flower the ſecond year, are a ſhort ſpan in length, and branching; the branches lax, ſlender, bearing few flowers: leaves at the baſe imbricate, lanceolate, ſeſſile, ſcattered, dotted beneath, above the middle moderately concave, toothed: teeth terminating in a reddiſh gland. A third part of the ſtem is covered with theſe; the reſt are linear, quite entire, and more remote. The flowers nod: corolla deep blue, half an inch long and four lines over, form oval wider below than at the edge; with three lines on each ſegment. Diviſions of the calyx the length of the ſegments of the corolla, erect, not toothed, ſlender and very ſharp. Germ very ſmooth, ten-angled, the angles alternately thicker. Haller took it for a variety of *C. alpina*. In dry rocky mountains, flowering the beginning of auguſt[f].

Very nearly allied to the *rotundifolia*. Perennial.

Native of Switzerland, Dauphiné, Carniola, Piedmont.

Bellardi found a variety of this with all the leaves lanceolate[g].

71. Root perennial. Very nearly allied to *C. linifolia* of John Bauhin, but the leaves are rather ſtrigoſe, hirſute, broader, and toothed[h].

It ſeems to be the intermediate link between the *rhomboidea* and *uniflora*. Haller has united it to the latter. The root is ſmall, and throws out one or two ſtems only two or three inches high, often bending to one ſide and arched. Stem-leaves oval oblong and linear. A ſingle flower at the top is deep blue or almoſt black, more lengthened out than in the ſpecies that moſt reſemble it[i].

Native of Piedmont and Dauphiné.

72. Root perennial. Plant entirely ſmooth. Stem three feet high, ſimple, ſtreaked, round. Leaves ſoft, ovate-lanceolate, unequally and ſharply toothed. Each axil produces a flower on a ſhort peduncle. Towards the top the flowers are nearer each other, and have linear bractes. Calyx five-cleft beyond the middle, with narrow ſegments, not reflex. Corolla and calyx nearly equal. Native of Italy, in woods[k].

73. Root perennial, creeping. Stems only two or three inches in height, having at top a ſingle flower, which hangs down, is a little villoſe, ſhorter than in *C. barbata*, but wider and more puffed out; calyx rough, the ſegments reaching to the middle of the corolla, and having ſmall appendages at the baſe. Root-leaves, which appear the firſt year, ſmall, blunt, and almoſt round; thoſe which come afterwards are longer; the bottom ſtem-leaves are ſtill longer, pointed, and a little waved on the edge, they are all roughiſh, and ciliate on the edge with ſmall ſtiff hairs[l].

Haller gives this as a variety of *C. barbata* (n. 35.). Allioni is perſuaded that it is a diſtinct ſpecies: and ſays, that he has found a one-flowered variety of that on Mont Cenis, but differing entirely from this in not having the leaves acute. *C. alpeſtris* is ſeldom, if ever, many-flowered. It grows on the very high Alps; and on Mont Cenis varies with a white flower[m]. According to Villars, it does not keep to the high Alps, among the turf, as the *barbata* does, but is frequently found in looſe ground, among ſhattered rocks, and in and about torrents which carry it down into lower ſituations. Add to this, that the *barbata* is biennial, and puſhes up only one ſtem or at moſt two; whereas this, from a perennial root, puſhes up ſeveral ſtems, which creep on every ſide. It is not always one-flowered; but then the flowers are axillary, upright, and not hanging down at the extremity of the ſtem, as in the *barbata*.]

74. This has many ſtiff oblong leaves coming out from the root on every ſide, which form a ſort of head like thoſe of Houſeleek, crenate, having a ſtrong rib running on their border longitudinally. From the center of the plant proceeds the ſtalk, which riſes about a foot high, and is thinly garniſhed with very narrow ſtiff leaves, of a ſhining green. From the wings of the leaves come out the peduncles, which are from two to four inches long, each being terminated by one ſpreading bell-ſhaped flower, whoſe calyx is ſhort, and cut into five acute ſegments. The ſtyle of this is longer than the petal, and is crowned by a biſid ſtigma. There is a white and a blue flower of this ſort in the gardens, but in Holland they have it with a double flower.

It is a native of North America, and has been long known in the gardens both of Holland and England. [Mr. Miller cultivated it in 1743. It flowers in july[n].

75. The ſtems are a little ſhrubby at the baſe[o]. Native of the Cape of Good Hope, where it was found by Mr. Francis Maſſon. Introduced in 1787. It is an annual, and flowers in ſeptember[p].

76. This is a very beautiful plant, but extremely brittle, abounding in milk, commonly quite ſmooth, bright green and lucid, but ſometimes lanuginous; it has a handſome head of flowers. The root is perennial and brown. The root-leaves are crowded, and kidney-form, with about eight ovate notches on the edge; petioles grooved, from an inch to two inches in length: ſtem-leaves alternate, ovate-lanceolate, with ſmaller notches: floral-leaves or bractes lanceolate-ovate, quite entire. Stems numerous, crowded, weak, hanging from the clefts of the rocks, branching towards the middle. Flowers two, three or more from the ends of the branches: ſegments of the calyx lanceolate, acute, rendered angular by a ridge along the back of each: corolla large, bright blue, flat with a very ſhort tube, and ſharp ſegments deeply cut: the nectariferous ſcales have the edge rough with hairs[q].

Native of the kingdom of Naples, eſpecially on the coaſt of the bays of Salerno and Amalfi. Firſt obſerved by Ray, then by Barrelier, and finally by Cyrilli and his family.

77. Root biennial. Stem upright, ſtreaked, a foot or more in height, ſcarcely leafy, with ſpread-

[b] Thunberg. [c] Forſter. [d] Allioni. [e] Ibid. [f] Scopoli. [g] Allioni. [h] Ibid. [i] Villars. [k] Allioni. [l] Villars. [m] Allioni. [n] Hort. kew. [o] L'Heritier. [p] Hort. kew. [q] Cyrilli.

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ing branches. Leaves radical, petioled. Flowers remote, commonly two together, blue, with a bracte under them the length of the germ: segments of the calyx acute: those of the corolla lanceolate, cut almost to the base. Capsule turbinate, angular, three-celled, with three holes opening laterally.

It differs from *C. limonifolia* in having the corolla so deeply cut, whereas in that they are divided only half way; the leaves also are toothed and somewhat rugged.

Native of Mount Libanus[s].

78. Stem herbaceous, procumbent, subdivided, very much branched; the small branches creeping. Leaves oblong-ovate, quite entire, small, hairy, opposite. Flowers white, sessile, axillary, solitary: calyxes acute, upright; corollas small, with rounded, acuminate segments; stigma trifid. Capsules roundish-three-cornered, hairy, three-celled, one-seeded. Native of Cochinchina[t]. ]

PROPAGATION AND CULTURE.

6. *Rampion* is propagated by seeds, which should be sown in a shady border the latter end of may, and when the plants are about an inch high, the ground should be hoed, as is practised for Onions, to cut up the weeds, and thin the plants to the distance of three or four inches; and when the weeds come up again, they must be hoed over to destroy them: this, if well performed in dry weather, will make the ground clean for a considerable time, so that being three times repeated, it will keep the plants clean till winter, which is the season for eating the roots, when they may be taken up for use as they are wanted. These will continue good till april, at which time they will send out their stalks, when they will become hard and unfit for use, as do also those roots which have flowered; the young roots only are fit for the table, when the seeds are sown too early, the plants frequently run up to flower the same year, and the roots are spoiled.

7. The *Peach-leaved Bell-flower*, and all the other hardy perennial sorts, which are very numerous in this genus, are easily propagated by parting their roots in autumn, at which time every head that is slipped off will grow. They will thrive in any soil and situation; and are proper furniture for the common borders of the flower-garden and shrubbery.

8. Those plants of the *Pyramidal* or *Steeple Bell-flower* which are trained for adorning halls and chimnies are seldom fit for the purpose the following season; a supply of young plants therefore should be annually raised. The common method of doing this is by dividing the roots; and the best time for doing it is in september, that the offsets may have time to get strong roots before winter.

This method of propagating by the offsets is the quickest, therefore generally practised, but the plants which are raised from seeds, are always stronger; the stalks will rise higher, and produce a greater number of flowers; therefore I recommend it to the practice of the curious; but in order to obtain good seeds, there should be some strong plants placed in a warm situation, near a pale, or wall, in autumn; and, if the following winter should prove severe, they should be covered either with hand-glasses or mats, to prevent their being injured by the frost; and, in the summer, when the flowers are fully open, if the season should prove very wet, the flowers must be screened from great rains, otherwise there will be no good seeds produced: the not observing this, has occasioned many to believe that the plants do not bear seeds in England, which is a great mistake, for I have raised great numbers of the plants from seeds of my own saving; but I have always found that the plants which have been long propagated by offsets, seldom produce seeds, and this is the case with many other plants which are propagated by slips, or cuttings, which in a few years become barren.

When the seeds are obtained, they must be sown in autumn in pots, or boxes, filled with light undunged earth, and placed in the open air till the frost of hard rains come on, when they should be placed under a hot-bed frame, where they may be sheltered from both, but in mild weather the glasses should be drawn off every day, that they may enjoy the free air; with this management the plants will come up early in the spring, and then they must be removed out of the frame, placing them first in a warm situation; but when the season becomes warm, they should be removed where they may have the morning sun only. During the following summer they must be kept clean from weeds, and in very dry weather, now and then refreshed with water, which must be given with great caution, for the roots are very subject to rot with too much moisture. In september the leaves of the plants will begin to decay, at which time they should be transplanted; therefore there must be one or two beds prepared, in proportion to the number of plants. These beds must be in a warm situation, and the earth light, sandy, and without any mixture of dung, which last is an enemy to this plant. If the situation of the place is low, or the natural soil moist, the beds must be raised five or six inches above the surface of the ground, and the natural soil removed a foot and a half deep, putting lime rubbish eight or nine inches thick in the bottom of the trench, to drain off the moisture. When the beds are prepared, the plants must be taken out of the pots, or cases, very carefully, so as not to break or bruise their roots, for they are very tender, and, on being broken, the milky juice will flow out plentifully, which will greatly weaken them. These should be planted at about four inches distance each way, with the head or crown of the root half an inch below the surface; if there happens a gentle shower of rain soon after they are planted, it will be of great service to the plants; but as the season sometimes proves very dry at this time of the year, in that case, it will be proper to give them a gentle watering three or four days after they are planted, and to cover the beds with mats every day, to prevent the sun from drying the earth; but these must be taken off in the evening, that the dew may fall on the ground. Towards the end of october the beds should be covered over with some old tanners bark to keep out the frost, and where there is not conveniency of covering them with frames, they should be arched over with hoops, that in severe frosts they may be covered with mats; for these plants, when young, are often destroyed in winter, where this care is wanting. In the spring the coverings must be removed, and the following summer the plants must be kept clean from weeds; and, if the season should prove very dry, they must now and then be refreshed with water. The following autumn the surface of the ground should be stirred between the plants, and some fresh earth spread over the beds, and in the winter covered as before. In these beds the plants may remain two years, during which time they must be treated in the manner before directed; by which time the roots will be strong enough to flower: in september they should be carefully taken up, and some of the most promising planted in pots, the others may be planted into warm borders, or in a fresh bed, at a greater distance than before, to allow them room to grow. These plants which are potted should be sheltered in winter from great rains and hard frosts, otherwise they will be in danger of rotting, or at least be so weakened, as not to flower with any strength the following summer; and those which are planted in the full ground, should have some old tanners bark laid round them, to prevent the frost from entering deep to the roots; with this management these plants may be brought to the utmost perfection, and a constant succession of good roots raised, which will be much preferable to those which are propagated by offsets. I have been informed that there is a double flower of this kind, but as I have not seen any, I can give no farther account of it.

[16. This, and several other sorts of Campanula deserve to be more generally cultivated, for their large and showy flowers. They are well adapted to the

[s] Billardiere. [t] Loureiro.

the decoration of rock-work, and being hardy perennials, may be propagated by parting their roots in autumn.]

27. *Broad-leaved Bell-flower* is eaſily propagated by ſeeds, which it furniſhes in great plenty; if theſe be ſuffered to ſcatter the plants will come up abundantly the following ſpring, when they may be removed into the nurſery till autumn, at which time they ſhould be tranſplanted where they are deſigned to remain. As this ſort delights in ſhade, the plants may be placed under trees, or in ſhady borders, where few better things will thrive, and they will there afford an agreeable variety when in flower.

28. With reſpect to the *Great Canterbury Bells*, the double ſorts are propagated by parting their roots in autumn, which ſhould be annually performed, otherwiſe the flowers are apt to degenerate to ſingle. The ſoil ſhould not be too light or rich, in which they are planted, for in either of theſe they will degenerate; but in a ſtrong freſh loam their flowers will be in the greateſt perfection. Theſe plants being extremely hardy, may be planted in any ſituation; thoſe with ſingle flowers do not merit a place in gardens.

5. 30, 39. *Spreading* or *Field Bell-flower*, *Cervicaria* or *waved-leaved Bell-flower*, and *Rock Bell-flower*, with ſeveral others, may be propagated by ſeeds, ſown in the autumn; for ſuch as are ſown in the ſpring often fail, or at leaſt lie a year in the ground. When the plants come up they ſhould be removed into beds, and kept clean from weeds. A few plants of the thirty-ninth ſort may be ſet in pots, to be ſheltered in winter.

34. The *Medium*, commonly called *Coventry* or *Canterbury Bells*, is propagated by ſeeds, ſown in the ſpring on an open bed of common earth. When the plants are fit to remove, they are to be tranſplanted into other beds in the flower-nurſery, ſix inches aſunder, obſerving to water them frequently till they have taken new root; after which they will require no other culture, but to keep them clean from weeds till the following autumn, when they may be tranſplanted into the borders of the flower-garden. As theſe plants periſh the ſecond year, young ones ſhould be raiſed annually for a ſucceſſion.

46. [*Venus's Looking-glaſs* is commonly ſown in patches in the borders of the flower-garden among other hardy annuals in the ſpring; but if it be ſown in autumn, it will grow much taller, and flower a month earlier, namely in may.

49, 50, 56. May be treated in the ſame way; or if the ſeeds be permitted to ſcatter, they will come up without care.

74. This not producing ſeeds in England, is only propagated by offſets, which ſhould be taken off in auguſt, that they may get good root before cold weather comes in. They muſt be planted in ſmall pots, filled with freſh, light, loamy earth, and placed in the ſhade until they have taken root; then they may be put along with other hardy exotic plants; and in autumn they muſt be removed into ſhelter, for in ſevere winters plants which are expoſed are often deſtroyed; though in mild winters they will live in the open air.

[The directions given above, under the different articles, may ſerve for all the other hardy annuals, biennials, and perennials, of which this genus chiefly conſiſts. Some of the ſpecies come from the Cape; theſe muſt be kept in the dry ſtove, and otherwiſe treated like the plants from that country; they may in general be increaſed from cuttings.

CAMPANULA. See *Canarina*, *Hanmellia*, *Linum*, *Lobelia*, *Phyteuma*, *Roella*.

CAMPANULATA. See *Linnæa*.

CAMPECHE WOOD. See *Hæmatoxylum*.

CAMPHIRE or CAMPHOR WOOD and CAMPHORA. See *Laurus*.

CAMPHORATA. See *Camphoroſma*, *Herniaria*, *Polycnemum*, and *Selago*.]

CAMPHOROSMA. (*From Camphora and ὀσμὴ odor: ſmelling of Camphor.*)

*Lin. gen. n.* 164. *Reich.* 176. *Schreb.* 221. Camphorata. *Tournef. inſt.* 1705. *Juſſ.* 84.

Claſs. 4. 1. Tetrandria Monogynia.

Nat. order of *Holoraceæ*: *Atriplices* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* pitcher-ſhaped, half-four-cleft, compreſſed, permanent: ſegments acute; the oppoſite ones largeſt, recurved.

COR. none.

STAM. *Filaments* four, filiform, equal. *Anthers* oval.

PIST. *Germ* ovate, compreſſed. *Style* filiform, half-two-cleft, longer than the calyx. *Stigmas* acute.

PER. *Capſule* one-celled, gaping above, covered by the calyx.

SEED ſingle, oval, compreſſed, ſhining.

OBS. *Calyx four-leaved, the two larger leaflets keeled, the two ſmaller ones flat. Stamens four, ſhorter than the calyx. Styles two, longer than the calyx. Linn. Stamens five, longer than the flower; calyx five-toothed. Pollich palat. 1. p.* 166.

ESSENTIAL CHARACTER.

*Cal.* Pitcher-form: two of the teeth oppoſite, and the alternate ones very ſmall. *Cor.* none. *Capſ.* one-ſeeded.

SPECIES.

1. Camphoroſma monſpeliaca. *Hairy Camphoroſma.* *Lin. ſpec.* 178. *Reich.* 347. *amæn.* 1. 392. *mat. med.* 53. *Villars dauph.* 2. 308. *Allion. pedem. n.* 2062. *Plenck, ic. t.* 68.

Camphorata hirſuta. *Bauh. pin.* 486. *Buxb. cent.* 1. 18. *t.* 28. *f.* 1. *Zinn. gott.* 36. *Raii hiſt.* 210.

C. monſpelienſium. *Bauh. hiſt.* 3. 379. *f.* 380. *Tabern. hiſt.* 57. 1. *Park.* 568. 1.

*Leaves hirſute.*

[2. Camphoroſma acuta. *Sharp-leaved Camphoroſma.* *Lin. ſpec.* 178. *Reich.* 348. *amæn.* 1. 393. 2. *Pollich pal. n.* 167.

Camphorata altera. *Tabern. hiſt.* 57. 2.

Camphoratæ congener. *Bauh. pin.* 486. *Raii hiſt.* 210. *Park.* 568. 3.

Anthyllis altera Italorum. *Lob. ic.* 407. *Ger. emac.* 623. *f.* 3.

*Leaves ſubulate, rigid, ſmooth.*]

3. Camphoroſma glabra. *Smooth Camphoroſma.* *Lin. ſpec.* 178. *Reich.* 348. *amæn.* 1. 393. 3.

Camphorata glabra. *Bauh. pin.* 486. *Dalech. hiſt.* 1179. *Hall. helv. ed.* 1. 183. *n.* 1.

Polycnemon. *Hall. helv. n.* 1570.

*Leaves ſubtriquetrous, ſmooth, unarmed.*

[4. Camphoroſma Pteranthus.

*Lin. ſyſt.* 166. *Reich.* 348. *mant.* 41.

Louichea cervina. *L'Herit. monogr.*

Pteranthus dichotomus. *Forſk. ægypt.* 36.

*Very branching; peduncles unciform, dilated; braſtes creſted.*

5. Camphoroſma paleacea.

*Lin. ſyſt.* 166. *Suppl.* 128.

*Shrubby, branches ſpike-form thoſſy hairy.*]

DESCRIPTIONS, *&c.*

1. This is an annual plant with trailing branches; extending a foot or more in length. Leaves linear, hairy, placed cloſe on the branches. The flowers are produced from the joints, and are ſo ſmall as to be ſcarcely perceptible. [Native of the South of France, Spain, the county of Nice, *&c.* Ray obſerved it about Montpellier, Avignon, *&c.* It was cultivated in 1739 by Mr. Miller[a].

The whole plant ſmells of Camphor. It abounds in a volatile oily ſalt, and is warm and ſtimulating. An infuſion of it is of ſervice in the aſthma. The doſe from half an ounce to an ounce and half[b]. In Leucorrhæa eximium medicamentum. *Lin. amæn.*

2. Root perennial, ſlender, fuſiform, fibrous. Stems many, woody, decumbent, round, hairy, roughiſh, from a finger's length to a foot in height. Branches alternate. Leaves alternate, ſeſſile, linear, rather acute, quite entire, at the baſe, eſpecially the floral leaves, ciliate, five lines long, and hardly a quarter

[a] Hort. kew. [b] Allioni.

of a line broad, bright or yellowiſh green, pubeſcent, ſoft: there are uſually two ſmaller ones by the ſide of theſe, a line in length. Two ſmall flowers, half a line in length and breadth are ſeſſile in each axilla. Calyx roundiſh, villoſe, with five ciliate toothlets. Stamens five, longer than the flower, with roundiſh, yellow anthers. Style one: germ ovate, rather acute.—In very dry ſandy fields: flowering in july and auguſt*. Native of the Palatinate, Italy, and Tartary.]

3. This is a perennial plant, with trailing branches. The flowers are not more viſible than thoſe of the firſt ſort.

[Haller, in the firſt edition of his Swiſs plants, keeps this, and *Polycnemum arvenſe* ſeparate, both under the name of *Camphorata*: but in the ſecond edition he puts the ſynonym of Camph. glabra, *Bauh. pin.* to his *Polycnemon*. Linneus gives that of Anthyllis altera Italorum, *Lob.* both to the Polycnemum, and his ſecond ſpecies of Camphoroſma: as he does alſo that of Camphoratæ congener, *Bauh. pin.* Lin. ſpec. edit. 2.

4. Root annual, fibrous. Stem herbaceous, jointed, a palm high, dichotomous or trichotomous. Leaves linear, a little branched, roundiſh, verticilled, the two lower ſomewhat larger. Flowers ſubſeſſile, green, ſmall, ſurrounded with a very ſhort biſid membrane, from which on each ſide are three imbricate, foliaceous bractes, like the rudiments of leaves. Capſule globular, clothed with a two-horned ſpreading calyx and two awns from the outer leaflets of the calyx. Peduncle membranaceous, very much compreſſed. Native of Arabia[c], Egypt, and Barbary.

Monſ. L'Heritier has conſtituted a new genus from this plant, under the name of *Lautchea*, from his friend Monſ. René Louiche Deſfontaines, M. D. Prof. Bot. Member of the Academy of Sciences at Paris; he having ſent the ſeeds from Barbary to Monſ. L'Heritier, in whoſe garden it flowered and perfected ſeeds.—It is ſingular in its manner of flowering, and its fruit reſembling a flag's horns.

5. A ſhrub ſcarcely a foot high, determinately-branched. Branches alternate, the leaves and flowers mixed and imbricate. Chaffs membranaceous, white, minute. Leaves minute, elliptic, even, ſeſſile. Calyxes four-leaved: petals four, very ſhort, ciliate, obtuſe. Stamens ſcarce longer than the calyx. Germ ſuperior; ſtyle capillary; ſtigma ſimple. All which is hardly viſible to the naked eye. Found at the Cape, by Thunberg.]

PROPAGATION AND CULTURE.

Theſe plants are preſerved in gardens merely for the ſake of variety. They are propagated by ſeeds, which ſucceed beſt when ſown in the autumn. The European ſorts require only to be thinned, and kept clean from weeds; and if they are permitted to ſcatter their ſeeds, there will be a ſupply of young plants in the ſpring.

[CAMPHOROSMA. See *Dracocephalum*.]

CAMPION. See *Agroſtemma*, *Cucubalus*, and *Lychnis*.

[CAMPIUM. See *Chalcas*.

CANARINA. (*From the Canary iſlands, of which it is a native.*)

*Lin. gen. Reich. n.* 480. *Schreb.* 603. *Juſſ.* 164.

Claſſ. 6. 1. Hexandria Monogynia.

Nat. order of *Campanaceæ*. *Campanulaceæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* ſuperior: *leaflets* ſix, lanceolate, recurved, permanent.

COR. monopetalous, bell-form, ſix-cleft, nerved. *Nectary* of ſix valves, equal, diſtant, covering the receptacle.

STAM. *Filaments* ſix, ſubulate, ſpreading outwards, originating from the valves. *Anthers* pendulous from the tip.

PIST. *Germ* inferior, ſix-cornered. *Style* conical, ſhort. *Stigma* longer than the ſtamens, clavated, ſix-cleft.

PER. *Capſule* ſix-angled, obtuſe, ſix-celled.

SEEDS numerous, ſmall.

ESSENTIAL CHARACTER.

*Cal.* ſix-leaved. *Cor.* ſix-cleft, bell-form. *Stigmas* ſix. *Capſ.* inferior, ſix-celled, many-ſeeded.

SPECIES.

1. Canarina Campanula. *Canary Bellflower.*
*Lin. ſyſt.* 344. *Reich.* 2. 110. *mant.* 225.]
Campanula canarienſis. *Lin. ſpec.* 238. *ſyſt.* 209. *Mill. dict. n.* 14. *hort. cliff. t.* 8. *Pluk. alm. t.* 276. *f.* 1.

[*Stem erect, leaves haſtate, in threes or oppoſite.*

2. Canarina Zanguebar.
*Linr. cochinch.* 195.
*Stem ſcandent, leaves haſtate alternate.*

DESCRIPTIONS, *&c.*

1. Root perennial, tuberous-fuſiform. Stem three feet high erect ſolitary round even with ſwelling joints. Branches by three from each joint: the upper ones longer, dichotomous at the end; branchlets alternate. Leaves on the ſtem in threes, on the branches oppoſite, petioled, haſtate, toothletted, even, veined. Flowers from the forks of the upper branches ſolitary, peduncled, drooping. Corolla larger than the leaves, reſembling that of Crown Imperial, rufous, brighter within, with a yellow eye; each ſegment with three purple nerves. Style club-form, longer than the ſtamens.

It is very nearly allied to the Campanulas, but is diſtinguiſhed from them, becauſe the number ſix generally prevails in the germ, calyx, corolla, nectary, ſtamens, and ſtigma[e].

It was cultivated in 1696, in the royal garden at Hampton Court; and flowers from january to march[f].

2. Stem ſhrubby, round, even, branched. Leaves cordate-haſtate, quite entire, ſmooth, veined, petioled. Flowers ſolitary, lateral. Corolla pale-coloured. Capſule ſubovate, ſharp at the baſe, ſix-nerved, opening at the baſe. Seeds cordate, compreſſed, ſurrounded by a turbinate wing, odorous. Native of Zanguebar on the coaſt of Africa[g].]

PROPAGATION AND CULTURE.

1. It is propagated by parting the roots, which muſt be done with caution, for if they be broken or wounded, the milky juice will flow out plentifully, ſo that if they be planted before the wounds are ſkinned over, it occaſions their rotting, therefore whenever any of them are broken, they ſhould be laid in the green-houſe a few days to heal. The roots muſt not be too often parted, for that weakens the plants, and prevents them from flowering well. The beſt time for doing it is july, ſoon after the ſtalks are decayed. The earth ſhould not be rich, for that will cauſe the plants to be luxuriant in branches, but poor in flowers. The ſoil in which they ſucceed beſt, is a light ſandy loam, with a fourth part of ſcreened lime-rubbiſh. The pots ſhould at firſt be placed in the ſhade, and, unleſs the ſeaſon be very dry, they ſhould not be watered. About the middle of auguſt the roots will begin to put out fibres: when, if the pots be placed under a hot-bed frame, and as the nights grow cool, be covered with the glaſſes, opening them every day, it will greatly forward their flowering, and increaſe their ſtrength: when the ſtalks appear, the plants muſt be now and then refreſhed with water, but it muſt not be given too often, nor in great quantity. By the middle of ſeptember the plants will be grown ſo tall, that they muſt be removed into a dry airy glaſs-caſe, where they may enjoy the free air in fine weather, and yet be ſcreened from cold. In winter they muſt be frequently refreſhed with water, and ſcreened from froſt. In ſpring, when the ſtalks begin to decay, the pots ſhould be ſet abroad in the ſhade, and not watered.

[CANARIUM. (*From its vernacular name* Canari *in the Malay language.*)

*Lin. gen. Reich. n.* 480. *Schreb.* 1516. *Juſſ.* 370. *Gærtn. t.* 102.

Claſſ. 22. 5. Dioecia Pentandria.

[c] Pollich. [d] Linn. mant. [e] Linn. mant. and ſyſt. [f] Hort. kew. [g] Loureiro.

GENERIC

GENERIC CHARACTER.

*Male.*

CAL. *Perianth* two-leaved; *leaflets* ovate, concave, permanent.

COR. *Petals* three, oblong, like the calyx.

STAM. *Filaments* five, very short. *Authers* oblong, of the length of the petals.

*Female.*

CAL. As in the male; *leaflets* reflex.

COR. As in the male.

PIST. *Germ* ovate. *Style* scarcely any. *Stigma* headed, three-cornered.

PER. *Drupe* dry, ovate, acuminate, base surrounded by a crenate membrane.

SEED. *Nut* ovate, three-cornered, acute.

ESSENTIAL CHARACTER.

MALE. *Calyx* two-leaved. *Corolla* three-petalled.

FEMALE. *Calyx* two-leaved. *Corolla* three-petalled. *Stigma* sessile. *Drupe* with a three-cornered nut.

SPECIES.

1. Canarium commune.
   *Lin. syst.* 885. *mant.* 127. *Reich.* 4. 248. *Rumph. amb.* 2. 145. *t.* 47. *Besl. mus. p.* 22. *t.* 5. *Bauh. hist.* 1. *l.* 3. *p.* 308.
   C. Mehenbethene. *Gærtn. fruct.* 2. 98.
   β. Canarium sylvestre.
   *Gærtn. fruct.* 2. 99. *Rumph. amb.* 2. 155. *t.* 49.
2. Canarium decumanum.
   *Gærtn. fruct.* 99. *Rumph. amb.* 2. 166. *t.* 55.

DESCRIPTION, *&c.*

Leaves alternate, pinnated with an odd foliole; the common petioles striated: folioles nine, petioled, ovate-oblong, acuminate, even. Panicles with divaricate, rigid branches. Flowers sessile [a].

The fruit is a superior, ovate-acuminate berried drupe, covered with a thin olive-coloured skin; and having within it very little pulp full of capillary fibres. Shell bony, either very obscurely furrowed or smooth, three-celled, with three blunt teeth at the tip, and three obscure raised lines on the sides, bored with a filiform canal the whole length of the axis. In each cell a pair of seeds, of which one only comes to maturity; it is ovate-oblong.

The *Canarium commune* of Linnæus is a mere variety of this. The drupe is a little larger, and the pulp without fibres. The shell is more acutely three-cornered, the angles near the vertex marked with white, and as it were fungous, the sides very smooth, flattish, without the middle raised streak. Of the three cells two almost obliterated, the third only fertile, and larger than in this. The seed also a little larger.

In the oldest seeds, the kernel is never rancid in either of these, but always sweet like that of sweet almonds; which is the more remarkable, because the cotyledons seem always as if anointed with oil, insomuch that they are very slippery and repel water [b].

This is a tree, native of the Molucca isles, Banda, New Guinea, *&c.* The nuts are eaten both raw and dressed by the inhabitants; an oil is expressed from them which is used at the table when fresh, and for lamps when stale: bread is also made of them, and cakes, biscuits, *&c.* for the table. Eaten fresh, they are apt to bring on diarrhœas and dysenteries, and to occasion an oppression of the breast [c].

β. The drupe is fleshy, obovate or thicker at top, rounded not three-cornered. Shell ovate, stony, very thick, very obscurely three-cornered, with three depressed longitudinal lines, to which as many small callous tubercles are joined below the tip of the shell. Cells three, two of which are often obliterated, the third only fertile, very irregular, and lined with a very smooth cartilaginous crust. Seed oblong, three-cornered, bent like the letter S, gibbous in contrary directions near each end: skin single, membranaceous, chestnut-bay-coloured. No albumen. Embryo very brittle. Cotyledons fix, unequal, variously bent. It is very difficult to get out the kernel from the shell, on account of its singular form and brittleness.

γ. The drupe is larger than that of the others. Shell ovate-oblong, three-cornered, stony, thick, six-toothed at the end: angles prominent, smooth, with a longitudinal groove in the middle, and the sides with holes, as if eaten with worms: axis perforated with a three-sided canal: cells three, large [d].

CANARY-GRASS. See *Phalaris*.

CANDEL and CANDELA. See *Rhizophora*.

CANDELABRUM. See *Ceropegia*.

CANDLEBERRY-TREE. See *Myrica*.

CANDY-TUFT. See *Iberis*.

CANE. See *Arundo*.

CANELLA.

*Lin. gen. Schreb. n.* 817. *Swartz obs.* 189. *in Linn. transf.* 1. 99. *t.* 8. & 2. 336. *Brown. jam.* 275. *Gærtn. t.* 77. Winterana. *Lin. gen. n.* 598. *Reich.* 653. *Juss.* 263.

Class. 11. 1. Dodecandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, three-lobed: *lobes* roundish, concave.

COR. *Petals* five, oblong, sessile, longer than the calyx; two a little narrower than the rest.
*Nectary* pitcher-shaped, the length of the petals, anther-bearing.

STAM. *Filaments* none. *Authers* twenty-one (sixteen, *S.* twelve to twenty, *G.*) linear, parallel, distinct, fastened on the outside to the nectary.

PIST. *Germ* superior, within the nectary, ovate. *Style* cylindric, the length of the nectary. *Stigmas* two (two or three, *Sw. obs.* three, *S.*) blunt, convex, wrinkled.

PER. *Berry* oblong, three-celled.

SEEDS roundish-kidney-shaped (two to four.)—in pairs, cordate, *Schreb.*—geminate, shining, *Gærtn.*

OBS. *Allied to* Tinus. *In the ripe fruit one cell only is fertile, the rudiments of the other two being rarely seen.*

ESSENTIAL CHARACTER.

*Cal.* three-lobed. *Cor.* five-petalled. *Authers* twenty-one (twelve to twenty-one) fastened to a pitcher-shaped nectary. *Berry* three-celled (one or two-cells abortive). *Seeds* two to four.

SPECIES.

1. Canella alba. *Laurel-leaved Canella.*
   *Lin. syst.* 443. *Ait. hort. kew.* 2. 125. *Swartz obs.* 190. *in Linn. transf.* 1. 96. *t.* 8. *Brown. jam.* 275. *t.* 27. *f.* 1. 3. *Plenck, ic. t.* 363. *Woodv. med. bot.* 318. *t.* 117.
   C. Winterana. *Gærtn. fruct.* 1. 373.
   Winterania Canella. *Lin. syst. ed.* 13. 369. *Reich.* 2. 418. *suppl.* 247. *mat. med.* 119. *Mill. dict.*
   Laurus Winterana. *Lin. spec. ed.* 1 371. *hort. cliff.* 448.
   Cortex Winteranus. *Blackw. herb. t.* 206. *Dale pharm.* 296. *Lewery*, 170. *Pomet*, 147. &c.
   Cassia cinnamomea. *Pluk. phyt. t.* 160. *f.* 7.
   Pseudo-Cassia cinnamomea americana. *Bauh. pin.* 409.—Canella peruana. *ejusd.* 461. *Park. theat.* 1581.
   Canella Cubane. *Johns. dendr.* 165.
   Lignum s. potius cortex aromaticus. *Monard.* 334. *Lact.* 24.
   Arbor baccifera, &c. *Sloan. jam.* 2. 87. *t.* 191. *f.* 2. & *Philos. transf. n.* 192. *p.* 462. *Catesb. car.* 2. *t.* 50.
   Arbor Jucaiæ. *Nieremb.* 294.

DESCRIPTION, *&c.*

This is a tree, the stem of which rises from ten to fifty feet in height, very straight and upright, and branched only at the top. The bark is whitish, by which it is known at first sight in the woods. The branches are erect, and not spreading. Leaves petioled, alternate, but not regularly, oblong, pointed, entire, without any distinct nerves or veins, dark green, of a thick consistence like those of Laurel, and shining. The flowers grow at the tops of the branches in clusters, but upon divided peduncles;

[a] Linnæus. [b] Gærtner. [c] Rumphius. [d] Gærtner.

they are ſmall and ſeldom open, and of a violet colour. The lobes of the calyx are divided almoſt to the bottom, incumbent, green, ſmooth, membranaceous, permanent. The petals are concave, upright, thick, and deciduous; as is alſo the nectary *. The berry is fleſhy, ſmooth, black: the receptacle is the central angle of the cells, to which the ſeeds are fixed. The ſeeds are regularly two in each cell, but one or two cells are commonly abortive; they differ in form, but are uſually globular, and beaked, always very ſmooth, black and ſhining; the outer ſkin is cruſtaceous, thin and brittle; the inner of a bay-brown colour †.

It is common in moſt of the Weſt-India iſlands, and is frequently found near the coaſt; then ſeldom exceeding twelve or fifteen feet: in the inland woods it attains a more conſiderable height.

The whole tree is very aromatic, and when in bloſſom perfumes the whole neighbourhood. The flowers dried, and ſoftened again in warm water, have a fragrant odour, nearly approaching to that of Muſk. The leaves have a ſtrong ſmell of Laurel. The berries, after having been ſome time green, turn blue, and become at laſt of a black colour and glaſſy, with a faint aromatic taſte and ſmell. When ripe, the white-bellied and bald-pate Pigeons (*Columba jamaicenſis* and *leucocephala*) feed greedily upon them, and thence acquire their peculiar flavour.

This bark, and the fruit of Capſicum, were formerly common ingredients in the food and drink of the Caraibs; and at preſent it makes a neceſſary ingredient in the meagre pot of the negroes ‡. It was cultivated in 1739, by Mr. Miller §.

The bark is brought to Europe in long quills, which are about three quarters of an inch in diameter, ſomewhat thicker than Cinnamon, and both externally and internally of a whitiſh or light brown colour, with a yellowiſh hue, and commonly intermixed with thicker pieces, which are probably obtained from the trunk of the tree. In taſte it is moderately warm, aromatic, and bitteriſh. Its ſmell is agreeable, and reſembles that of Cloves. Its virtues are extracted moſt perfectly by proof ſpirit. The uſe of Canella alba now ſuperſedes that of the old bark of Winter, on the authority of both the London and Edinburgh pharmacopœias. It has been ſuppoſed to poſſeſs conſiderable virtues, and is ſaid to be uſeful in ſcorbutic and many other complaints. It is now however conſidered merely in the light of an aromatic, and like many other ſpices, is employed for the purpoſe of correcting diſagreeable drugs. It is therefore an ingredient in the pulv. aloet. Pharm. Lond. and in the tinctura amara, vinum amarum, vinum rhei, &c. of the Pharm. Edinb.]

PROPAGATION AND CULTURE.

This tree is too tender to live in England out of a ſtove. The plants require to be plunged in the tan-bed, and in winter ſhould be ſparingly watered; in ſummer they ſhould have it in greater plenty, when alſo they ſhould have a good ſhare of air admitted to them when the weather is warm. With this management the plants may be preſerved very well, but they are difficult to propagate either by layers or cuttings. The ſureſt method is to procure freſh ſeeds from the Weſt-Indies.

CANNA. (*Uſually not diſtinguiſhed from arundo and calamus, but it is larger than the firſt, and leſs than the ſecond. Kanna is interpreted Arabic, which ſignifies a mat, and was made of this plant. Hence our word Cane.*)

Engl. *Indian Flowering Reed*, or *Indian Shot*.
Fr. *Baliſier*.

*Lin. gen.* 1. *Reich.* 1. *Schreb.* 1. *Gaertn. t.* 12. *Juſſ.* 63. *Cannacorus Tournef.* 392.

Claſſ. 1. 1. Monandria Monogynia.
Nat. order of *Scitamineæ*. *Cannæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* three-leaved; *leaflets* lanceolate, erect, ſmall, coloured, permanent.

COR. monopetalous, ſix-parted: *diviſions* lanceolate, conjoined at the baſe, the three outer ones erect, larger than the calyx; the three inner ones larger than the outer, two erect, one reflected, and thus conſtituting the upper lip.

*Nectary* petal-like; two-parted, of the length and figure of the petals; the upper diviſion aſcending, the inferior revolute, imitating the lower lip of a corolla.

STAM. *Filaments* none. *Anthers* lineal, growing to the upper margin of the diviſion which bears the nectary.

PIST. *Germ* roundiſh, rugged, inferior. *Style* ſingle, enſiform, growing to the anther-bearing nectary, lanceolate, of the length and figure of a petal. *Stigma* linear, growing to the margin of the ſtyle.

PER. *Capſule* roundiſh, rugged, crowned, three-grooved, three-celled, three-valved.

SEEDS few, globular.

OBS. *The nectary was afterwards regarded by Linnæus as the lip of the corolla, to which the ſtyle grows.* Syſt.

ESSENTIAL CHARACTER.

*Corolla* ſix-parted, erect; *lip* two-parted, revolute. *Style* lanceolate, growing to the corolla. *Calyx* three-leaved.

SPECIES.

1. Canna indica.
*Lin. ſpec.* 1. *Reich.* 2. *fl. zeyl.* 1. *Gaertn. fruct.* 1. 37. *t.* 12. *Mill. illuſtr. Amer. marab.* 1. 1. *Rio. mon.* 1. 111, 112. *Beſl. cyp. ind.* 2. *t.* 1, 2.
Cannacorus. *Rumph. amb.* 5. 177. *t.* 71. *f.* 2.
Arundo indica latifolia. *Bauh. pin.* 19. *Mor. hiſt.* 3. 250. *ſ.* 8. *t.* 14. *f.* 1.
Canna ſ. A. ind., quibuſdam Flos Cancri. *Bauh. hiſt.* 1. 752. *Raii hiſt.* 1202.
C. ind. fl. rubro. *Park. parad.* 376. *f.* 1. 381.
Gladiolus indicus. *Camer. epit.* 731.
Arundo florida. *Ger.* 36. fig. *emac.* 39.
Katu-Bala. *Rheed. mal.* 11. 85. *t.* 43.
β. Canna latifolia. *Mill. dict. n.* 2.
Cannacorus ampliſſimo fol., fl. rutilo. *Tourn. inſt.* 367.
γ. C. coccinea. *Mill. dict. n.* 3. *Hort. kew.* 1. 7.
C. fl. coccineo ſplendente. *Tourn. inſt.* 367.
*Scarlet Indian Reed* or *Shot*.
δ. C. lutea. *Mill. dict. n.* 4.
C. ind. fl. flavo punctato. *Hort. kew.* 1. β. *Park. parad.* 376.
Cannacorus fl. luteo punctato. *Tourn. inſt.* 367. *Rio.* 1. 112.
*Yellow Indian Reed* or *Shot*.
*Leaves ovate, acuminate at both ends, nerved.*

[2. Canna anguſtifolia. *Narrow-leaved Indian Reed.*
*Lin. ſpec.* 1. & 1675. *Reich.* 2. *hort. cliff.* 1. *n.* 2.
Cannacorus anguſtifolius, fl. flaveſcente. *Tourn. inſt.* 367. *Rio.* 1. 113.
Arundo indica florida anguſtifolia. *Mor. hiſt.* 3. 250. *ſ.* 8. *t.* 14. *f.* 6.
Albara, ſ. Pacivira. *Piſ. braſ.* 213.
*Leaves lanceolate, petioled, nerved.*]

3. Canna glauca.
*Lin. ſpec.* 1. *Reich.* 2. *vir. cliff.* 104. *hort. cliff.* 488. *Hort. kew. n.* 2.
Cannacorus glaucophyllus, ampliore fl. Iridis paluſtris facie. *Dill. elth.* 1. 59. *f.* 69.
*Leaves lanceolate, petioled, nerveleſs.*

[4. Canna flaccida.
*Saliſb. ic. rar.* 3. *t.* 2.
*Leaves narrow lanceolate, ſmooth and even on both ſides; inner limb of the corolla five-cleft, ſegments flaccid obovate, the innoſt largeſt.*

5. Canna juncea.
*Retz. obſ.* 1. 9.
*Leaves linear nerved.*]

DESCRIPTIONS, &c.

1. This plant has a thick, fleſhy, tuberous root, which divides into many irregular knobs, ſpreading wide near the ſurface of the ground, ſending out many large ovate leaves without any order; theſe at their

* Swartz. † Gærtner. ‡ Swartz. § Hort. kew.

their firſt appearance, are twiſted like a horn, but afterwards expand and are near a foot long, and five inches broad in the middle, leſſening gradually to both ends, and terminating in points. They have many large tranſverſe veins running from the midrib to the ſides, which are prominent on their under ſide; and between each of theſe run two ſmaller, parallel, pointed veins, which are peculiar to this ſpecies. The ſtalks are herbaceous, riſing four feet high, encompaſſed by the broad leafy foot-ſtalks of the leaves; theſe are compreſſed on two ſides; at the upper part of the ſtalk the flowers are produced in looſe ſpikes, each being at firſt covered by a leafy hood, which afterwards ſtands below the flower, and turns to a brown colour. Each flower has one petal, which is cut almoſt to the bottom into ſix ſlender ſegments, the three upper broadeſt; theſe are of a pale red colour. The flower is encompaſſed by a three-leaved calyx, which ſits upon a ſmall, roundiſh, rough germ, which, after the flower is fallen, ſwells to a large fruit or capſule oblong and rough, having three longitudinal furrows, and is crowned by the three-leaved calyx of the flower which remains. When the fruit is ripe, the capſule opens lengthways into three cells, which are filled with round, hard, black, ſhining ſeeds. The principal ſeaſon of theſe plants flowering, is in june, july, and auguſt.

1. β. This variety grows naturally in Carolina, and ſome of the other northern provinces of America. The leaves are longer than thoſe of the former, and terminate in ſharper points. The ſtalks grow taller, and the ſegments of the flower are much narrower; the colour being a pale red, it makes no great appearance. The ſeeds are like thoſe of the former.

1. γ. This variety has larger leaves than either of the former; the ſtalks riſe much taller. I have received the ſeeds of this from America, and from the Brazils, by the title of Wild Plantain. The flower-ſtalks riſe more than ſix feet high. The leaves are very large, and thoſe near the root have long foot-ſtalks. The flowers are produced in larger ſpikes than thoſe of the former, and are of a much brighter ſcarlet. The ſeed-veſſels are longer, and the ſeeds larger.

1. δ. This variety is leſs common in America than either of the former. I received the ſeeds from India, but have had two varieties ariſe from the ſeeds, one with a plain yellow, and the other with a ſpotted flower, which I find are apt to change from one to the other, when propagated by ſeeds. This has ſhorter and rounder leaves than either of the former. The ſtalks ſeldom riſe higher than three feet, and the ſpikes of flowers are like thoſe of the firſt, excepting the colour of the flowers.

[Gerard informs us that in his time, it was in the garden at Padua, &c. that he had planted it in his garden divers times, but it never came to flowering: and that it muſt be ſet or ſown in a pot with fine earth, or in a bed made of horſe-dung, in ſuch manner as Cucumbers and Muſk Melons are.—Parkinſon ſays, that in ſome kindly years this beautiful plant has borne its brave flowers, but never any ripe ſeed; and that it will not abide the extremities of our winters, unleſs it meet with a ſtove or hot-houſe, ſuch as are uſed in Germany: for neither houſe nor cellar will preſerve it. Cluſius ſaw it flowering by houſe ſides in Spain and Portugal: and ſays that the inhabitants there uſe the ſeeds for making their roſaries.—It is found wild within the tropics on all the Continents.

2. This is ſcarcely to be diſtinguiſhed from the firſt, and therefore he who would conſider it as a variety, would ſtrdily be miſtaken. It is however lower and narrower. The three inner petals are emarginate, as in that; but one of the lateral petals in this is ſo bent as to become the middle one.—Within the tropics in America, in ſhady ſpongy places*.]

* Linn. ſpec.

3. The roots of this are much larger than either of the former ſorts, and ſtrike down ſtrong fleſhy fibres deep in the ground. The ſtalks riſe ſeven or eight feet high. The leaves are near two feet long, narrow, ſmooth, and of a ſea-green colour. The flowers are produced in ſhort thick ſpikes at the extremity, are large, and of a pale yellow colour; the ſegments of the petal are broad, but their ſhape like thoſe of the other ſorts. The ſeed-veſſels are larger, and much longer than thoſe of the other ſorts, but contain fewer ſeeds, which are very large.

[Cultivated in 1732 at Eltham by James Sherard, M. D.*] Mr. Miller received the ſeeds of this from Carthagena in New Spain, in the year 1733, which produced very ſtrong plants the firſt year, and ſome of them flowered the ſame autumn.

[4. Four feet high or more, very much reſembling Canna glauca in the herb. Root horizontal, tuberous, perennial. Stem pale glaucous, upright, ſimple, round, jointed, ſmooth, herbaceous, annual, almoſt covered by the petioles. Leaves five to ſeven, pale glaucous, alternate, ſhorter than the petiole or ſheath, ſpreading, quite entire with a very thin membranaceous edge, pointed at the end, very finely nerved, a little channelled on the upper, and keeled eſpecially towards the baſe on the lower ſurface. Flowers one to three, without ſcent, nodding a little; peduncle a continuation of the ſtem, angular. Bractes two under each germ, very pale glaucous; the outer preſſed cloſe, the inner longer and narrower, often curved in and patulous; both blunt and quite entire, permanent. Calyx very pale glaucous; leaflets unequal, embracing the tube of the corolla, quite entire, blunt. Corolla pale yellow; tube much longer than the calyx, a little recurved; outer limb a little longer than the tube, reflex, deeply trifid; ſegments unequal, linear-lanceolate, quite entire, blunt, thicker; inner limb ſtill longer, deeply quinquefid; ſegments unequal, much curled about the edge, the inmoſt emarginate; the whole is very tender, ſmooth, and deciduous. Anther whitiſh, confluent with the edge of the inner ſide of the inmoſt ſegment, upright, very minutely pointed, two-celled, gaping in front. Germ pale green, oval, minutely papilloſe. Style very pale yellow, linear-ſpatulate, ſmooth on both ſides, flat. Stigma whitiſh, minutely pubeſcent. It is often confounded with Canna glauca in our ſtoves. Native of South Carolina, where it was found by Bartram*.

5. Leaves reſembling thoſe of Graſs, with five raiſed nerves, ſheathing at the baſe, near the root covered with capillary fibres, a ſpan or a foot in length. Scape with ſeveral lanceolate ſheaths, and few flowers. Corolla ſmall, of a duſky rufous colour. Pericarp muricated. It is very diſtinct from *C. anguſtifolia*, the leaves being by no means petioled, and much narrower. It was diſcovered in China by Bladh*.]

PROPAGATION AND CULTURE.

All the ſorts are propagated by ſeeds, which ſhould be ſown on a hot-bed in the ſpring; and when the plants are fit to remove, they ſhould be tranſplanted into ſeparate ſmall pots, filled with rich kitchen-garden earth, and plunged into a moderate hot-bed of tanners-bark, obſerving to ſhade them till they have taken root; after which, they ſhould have a large ſhare of free air admitted to them every day in warm weather, and be frequently refreſhed with water. As theſe plants will make great progreſs in their growth, they muſt be ſhifted into larger pots filled with the ſame ſort of earth, and part of them plunged into the hot-bed again; and the others may be placed abroad in june, with other exotic plants, in a warm ſituation. Thoſe which are placed in the hot-bed, will be ſtrong enough to flower well in the ſtove the following winter; but thoſe in the open air, will not flower before the following ſummer. Theſe may remain abroad till the beginning of october, when they muſt be removed into the ſtove, and treated in the ſame manner as the old plants;

* Hort. kew. * Salisbury. * Retz.

and in may, a gentle hot-bed ſhould be made, covered a foot thick with rich earth, and the plants turned out of the pots, planting them with their balls of earth upon the hot-bed, covering each with a bell-glaſs, which may be raiſed on one ſide every day to admit air to the plants; and as they advance, they muſt be gradually inured to bear the open air. With this management the plants will grow much taller, and flower ſtronger than thoſe which are kept in pots, and from theſe good ſeeds may be expected in autumn. Theſe plants will continue many years with proper management; but as young plants always flower better than the old roots, it is ſcarce worth while to continue them after they have borne good ſeeds.

As the firſt ſort is a native of the warmeſt parts of America, it requires to be placed in a moderate ſtove in winter, otherwiſe the roots will decay. I have frequently tried to keep theſe roots through the winter in a green-houſe, but could not ſucceed; for although ſome have eſcaped, yet they were ſo much weakened by the cold, as not to recover their ſtrength the following ſummer, ſo as to flower in any tolerable degree of perfection; ſo that I have ſince conſtantly kept them in winter in a moderate ſtove, where they always flower in that ſeaſon, at which time they make a fine appearance; and in the ſummer, place them abroad in a ſheltered ſituation with other tender exotic plants, where they flower again, and produce ripe ſeeds annually.

β. The ſecond variety, which is much hardier than the others, ſhould have a different treatment. The young plants of this muſt be earlier inured to the open air, where they may remain till the froſt begins; then they muſt be placed in the green-houſe, and ſhould have but little wet in winter; and the beginning of may, theſe ſhould be turned out of the pots, and planted in a warm ſouth border, in a dry ſoil, where they will thrive and produce flowers annually; but as there is little beauty in this ſort, a few plants for variety will be ſufficient. Sometimes it has variegated leaves. This may be propagated by parting the roots, but having little beauty, it is ſcarcely worth cultivating.

3. The young plants which are raiſed from ſeeds of this ſort, do more certainly flower than the old roots, or the offſets taken from them; for the roots ſend out many offſets, which will ſpread to a conſiderable diſtance where they have room, but ſeldom produce flowers; ſo that it is the beſt way to raiſe a ſucceſſion of plants from ſeeds, and to throw out the old ones after they have perfected their ſeeds.

CANNABINA. See *Bidens*, *Datiſca*, and *Verbeſina*.

CANNABIS. (*Gr. Κάνναβις* or *κάνναβος*, *from κάννα. See Canna.—Κάνναβοι, are foul ſprings, wherein Hemp, &c. grow naturally.*)

Eng. *Hemp.* Fr. *Chanvre.*

*Lin. gen.* 1115. *Reich.* 1220. *Schreb.* 1522. *Gærtn. t.* 75. *Tourn.* 308. *Juſſ.* 404.

Claſſ. 22. 5. Dioecia Pentandria.

Nat. order of *Scabridæ*. *Urticæ* Juſſ.

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* five-parted; *leaflets* oblong, acuminately obtuſe, concave.

COR. none.

STAM. *Filaments* five, capillary, very ſhort. *Anthers* oblong, four-cornered.

* *Female.*

CAL. *Perianth* one-leafed, oblong, acuminate, gaping longitudinally on one ſide, permanent.

COR. none.

PIST. *Germ* very ſmall. *Styles* two, ſubulate, long. *Stigmas* acute.

PER. very ſmall; calyx tightly cloſed.

SEED. *Nut* globoſe-depreſſed, bivalve.

ESSENTIAL CHARACTER.

MALE. *Calyx* five-parted. *Corolla* none.

FEMALE. *Cal.* one-leafed, entire, gaping on one ſide. *Corolla* none. *Styles* two. *Nut* bivalve within the cloſed calyx.

SPECIES.

1. Cannabis ſativa.

*Lin. ſpec.* 1547. *Reich.* 4. 251. *hort. cliff.* 457. *mat. med.* 213. *Gærtn. ſemſ.* 1. 357. *Hall. helv.* n. 1616. *Gmel. ſib.* 3. 104. *Lour. cochinch.* 616. *Blackw. t.* 322. *Mill. fig. t.* 77. *Bauh. pin.* 320. 1. & 3. *Bauh. hiſt.* 1. 447. fig. 448. *Raii hiſt.* 158. *Ger.* 372. *emac.* 708. *f.* 1, 2. *Park.* 598.

DESCRIPTION, *&c.*

1. [Stem the height of a man or more (ſometimes eighteen feet) branched, hairy, as are alſo the leaves, which are digitate, ſtender, ſerrate; the folioles ſeven, the outer ones ſmalleſt. In the female plant the flowers are ſolitary in the axillas: in the male, they are in thin pendulous ſpikes, at the ends of the ſtem and branches. Some female flowers are frequently found among the males, and ſome males among the females[a]. It is therefore no objection to the ſexual ſyſtem, that female plants of the Hemp have produced perfect ſeed, when there have been no male plants near them. Mr. Miller however affirms, that he made trial of this for ſeveral years, by removing all the male plants; and although the female plants continued ſtrong and flouriſhing, yet they never produced any good ſeeds[b]. It may not be amiſs to obſerve, that all the old authors, ignorant of the true doctrine of the ſexes, and blindly following the ancients, are exactly wrong; for they call the male plants female, and the females male.

Like many other plants generally cultivated, it is difficult to aſcertain the original place of its native growth. We may however trace it, with moſt of the reſt, to the Eaſt. Linnæus, in his Materia Medica, gives it to the Eaſt-Indies and Japan. Thunberg ſays it grows here and there, in Japan. Gmelin thinks it may be a native of Tartary, ſince he found it there, though the Tartars do not cultivate it. In the Species Plantarum it is ſaid to grow wild in India, but in Reichard's edition of the Syſtema it is aſſigned to Perſia. Father Hennepin found it wild among the Illinois in America. Pliny and Dioſcorides ſpeak of it as a native of Europe.

The uſes of Hemp are well known, as well as its great importance to the navy for ſails and cordage. Exceeding good huckaback is made from it, for towels and common table-cloths. The low priced hempen cloths are a general wear for huſbandmen, ſervants, and labouring manufacturers; the better ſorts (from 18d. to 2s. the yard) for farmers and tradeſmen in the country; and the finer ones ſeven-eights wide (from 2s. 6d. to 3s. 6d. the yard) are preferred by ſome gentlemen, for ſtrength and warmth. They poſſeſs this advantage over Iriſh and other linens, that their colour improves in wearing, whilſt theirs declines. Engliſh Hemp, properly manufactured, ſtands unrivalled in its ſtrength, and is ſuperior in this reſpect to the Ruſſian. Conſiderable quantities of cloth are imported from that country for ſheeting, merely on account of its ſtrength, for it is coarſer at the price than other linen. Our hempen cloth however is preferable, being ſtronger from the ſuperior quality of the thread, and at the ſame time lighter in waſhing[c].

The Hemp raiſed in England is not of ſo dry and ſpongy a nature as what we have from Ruſſia, and therefore it requires a ſmaller proportion of tar to manufacture it into cordage. Tar being cheaper than Hemp, the rope-makers prefer foreign Hemp to ours, becauſe they can make a greater profit in working it: but cordage muſt certainly be ſtronger in proportion as there is more hemp and leſs tar in it, provided there be a ſufficient quantity of the latter to unite the fibres[d].

An oil is extracted from the ſeeds of Hemp. The ſeeds themſelves are reckoned a good food for poultry, and are ſuppoſed to occaſion hens to lay a greater quantity of eggs. Small birds in general are very fond of them, but they ſhould be given to

[a] Haller. [b] Figures, p. 52.
[c] Young's ann. of agric. 10. 383, 386.
[d] Bath papers, 2. 377.

caged birds with caution, and mixed with other ſeeds. A very ſingular effect is recorded, on very good authority, to have been ſometimes produced by feeding Bullfinches and Goldfinches on Hemp-ſeed alone, or in too great quantity; viz. that of changing the red and yellow on thoſe birds to a total blackneſs.

It does not ſeem that the *Bangue* of the Eaſt-Indies, or the great Chineſe Hemp, or the large ſort which Parkinſon received from Virginia, are different from our Hemp, except in ſize.

Hemp is named in German *Hanf*, or *Hampf*; in Dutch *Hennip* or *Kennip*; in Daniſh *Hamp*; in Swediſh *Hampa*; in French *Chanvre*; in Italian *Canapa*; in Spaniſh and Portugueze *Canamo*; in Ruſſian *Konapli*, *Konopel*, *Kanaple*; in Poliſh *Konop*; in Illyrian and Sclavonian *Konoplija*; in Walachian *Kænepe*; in Hungarian *Kender*; in Tartarian *Kinder*; in Armenian *Kanop*; in Arabian *Sjaranck*; in Perſian *Cannab*; in Chineſe *Ma fuen*, *Chu ſao*. There can be no doubt but that the Greeks took their name from the Eaſtern *Kanop* or *Cannab*, and that the plant originally migrated into Europe from thoſe countries, notwithſtanding what Pliny and Dioſcorides affirm of its growing wild in Europe.]

PROPAGATION AND CULTURE.

Hemp is commonly ſown on a deep, rich, moiſt ſoil, ſuch as is found in the tract called Holland in the county of Lincoln, and the fens of the iſle of Ely, where it is cultivated to great advantage; as it might in many other parts of England, where there is the like ſoil; but it will not thrive on clay, or ſtiff cold land. [It is however found that it will do very well after Turneps on friable loams, and good ſands, provided it be well manured. Spalding-moor in Lincolnſhire is a barren ſand, and yet with proper care and culture, it produces as fine Hemp as any in England, and in large quantities. In the iſle of Axholme, in the ſame county, the culture and management of it is the principal employment of the inhabitants; and according to Leland, it was ſo in the reign of Henry VIII.[a] In the county of Suffolk, in the diſtrict extending from Eye to Beccles, it is cultivated on a ſandy loam, with great ſucceſs[b]. On ſuch ſoils, the quantity is not ſo great as in a black rich mould, but the quality is much finer, and therefore better adapted to the fabric of hempen cloth.]

Hemp is eſteemed a cleanſing crop; for it deſtroys all weeds, by depriving them of their nouriſhment; but at the ſame time it is a great impoveriſher of land, and therefore muſt not be repeated on the ſame ground. [It may however be grown, with ſucceſs on the ſame land many years, by manuring annually; it is even ſaid that it has been ſown on the ſame piece for ſeventy years together. If it ſtands for ſeed, it is on all hands acknowledged to be an exhauſting crop; but if it be cut without ſeed, it is on the contrary ſuppoſed by many to improve the land, and to be an excellent preparation for Wheat.

The land on which Hemp is to be ſown muſt have three earths given it, with harrowing ſufficient to make the ſoil perfectly fine; it is laid flat with as few furrows as poſſible. It muſt be well manured with twenty-five or thirty three-horſe loads of muck, or from ſixteen to twenty loads of dung to an acre, immediately after wheat-ſowing is finiſhed[c]; or, according to others, a fortnight before ſeed-time, which is from the beginning, or rather the middle, to the end of april. If ſown earlier, the ſpring froſts will greatly injure, if not deſtroy the plants. Sowing is ſometimes deferred to the middle of may; but the ſeaſon permitting, early ſowing is to be preferred, becauſe the quality of the Hemp is then ſuperior[d].]

Three buſhels is the uſual allowance for ſowing an acre, but two is fully ſufficient. [Others recommend eleven, or from nine to twelve pecks to the acre, according to the ſtrength of the ſoil; and ſome ſow as much as three buſhels and half[e].] In the choice of the ſeed, the heavieſt and brighteſt coloured ſhould be preferred; and ſome of them ſhould be cracked to ſee if they have the germ perfect. [The ſeed ſhould be gently and lightly harrowed in: and the birds muſt be kept off the land till the plants appear[f].]

In the fen countries the plants are hoed out in the ſame manner as is practiſed for Turneps, leaving them a foot or ſixteen inches apart, and cutting down all the weeds: they give them a ſecond hoeing about a month or ſix weeks after the firſt. If theſe hoeings be well performed, the crop will not require any farther care, for the Hemp will ſoon cover the ground, and prevent all growth of weeds.

[In other places no weeding is ever given it, the Hemp of itſelf choking every other plant.]

The firſt ſeaſon for pulling the Hemp, is uſually about the middle of auguſt, when they begin to pull the Eimble [Female or Thimble Hemp[g]], that is, the male plants. But it would be much better to defer this a fortnight or three weeks, [if the Hemp is to ſtand for ſeed] until theſe male plants have fully ſhed their duſt, without which it is well known, the ſeeds will not grow, nor will thoſe concerned in the oil-mills give any thing for them. The ſecond pulling is a little after michaelmas, when the ſeeds are ripe: this is of the female plants, Seed Hemp or Karle Hemp as it is uſually called. It is bound in bundles a yard in compaſs; they are laid in the ſun a few days to dry, and then are ſtacked up or houſed till the ſeed can be threſhed out. An acre of Hemp, on a rich ſoil, will produce near three quarters of ſeed; which, together with the unwrought Hemp, is worth from ſix to eight pounds.

[When Hemp is intended for making thread only, without any regard to the ſeed, the male and female Hemp is pulled together, thirteen or fourteen weeks after ſowing. The leaves turning yellow, and the ſtalks white are ſigns of its maturity. The wetter the ſeaſon the longer it ſtands; and it bears a dry year better than a wet one.

When the Hemp is all pulled up, it is bound in ſmall bundles, of ſuch a ſize as may be graſped with both hands, and tied with bands at each end; theſe bundles are called *baits*. Thus prepared the Hemp is conveyed to the water, in order to undergo the operation of *water-retting*[h]. For this purpoſe clay-pits are preferred to running water, and are cleaned out once in ſeven or eight years. Three ſmall waggon loads, the common produce of one acre, may be laid in one bed. The ſame water is not proper for receiving Hemp more than three times in a ſeaſon, although they will water ſometimes five times in the ſame hole; the firſt water however always produces the beſt colour, in the leaſt time. If it be neceſſary to wait, they pull as the hole is ready, not chooſing to leave it on the land after it is pulled. The bundles are placed in rows croſſing each other, and are kept under water by blocks and logs of wood. It ſoaks generally four days, if the weather be warm; if not, five or ſix; till the outſide coat eaſily rubs off. It is then ſpread out ſingly on graſs, and turned, if there be ſhowers, thrice a week; if not, twice a week. This is called graſſing, and requires five or ſix weeks. It is then tied up in large bundles of eight or ten baits, and carted home to a barn or houſe for *breaking*, by a machine called a *brake*: this is either done directly, or the bundles are laid up dry till december or january, for that purpoſe. Thus prepared, the Hemp is bound up in bundles, weighing a ſtone or fourteen pounds and a half each, and carried to market. The Hemp which breaks off in the operation, is called ſhorts; this is bound up by itſelf, and is about half the value of

[a] Bath papers, 2. 376. [b] Survey of Suffolk, 48. [c] Ibid. [d] Mills in Young's ann. 9. 377.

[e] Ibid, and 10. 377. and Survey of Suffolk, 48.
[f] Young's ann. 9. 377.
[g] Theſe names are a corruption of *Female*, the male plants having been taken for females, and *vice verſa*; by all ancient, and many modern writers. This error is continued in Abbé Brulles's memoir on Hemp, printed by the Lords of Trade and Plantations.
[h] Corrupted from *rotting*.

the

the long Hemp. The offal is called hemp-ſheaves, makes good fuel, and ſells at two-pence a ſtone.

The cuſtom of many places is to dew-ret their Hemp; that is, to ſpread it on meadow land, as ſoon as pulled, turning it frequently; but this is a very bad method, for the bark will not come off compleatly, it therefore requires more violent means to be uſed for bleaching the yarn, and conſequently diminiſhes the ſtrength: it is likewiſe much ſooner injured in rainy ſeaſons.

Hemp, when left for ſeed, is ſeldom water-retted. It is generally ſtacked and covered during the winter, and ſpread upon graſs in january or february. If the ſeaſon ſuits, particularly if it be covered with ſnow, it will come to a good colour, and make a ſtrong coarſe cloth: but it is much inferior to Hemp pulled in proper time, and water-retted.

The Hemp now paſſes from the grower to the hickler or heckler, who firſt bunches or beats it, either by hand, or more frequently by a mill; and then dreſſes or combs it, by drawing it through hickles or heckles, reſembling wool-combers tools, only fixed. It is dreſſed finer or coarſer, to ſuit the demands of the purchaſers: ſometimes the whole is worked together for one ſort, and ſometimes it is divided into two or three ſorts, called *long ſtrike*, *ſhort ſtrike*, and *pull tow*. The heckler either ſells the tow to ſpinners and weavers, or puts it out to ſpin himſelf, and diſpoſes of the yarn to the latter. The weaver delivers the yarn to the whiteſter, who returns it to him bleached. This is a difficult operation; the art conſiſting in procuring the beſt colour with the leaſt diminution of ſtrength. It is performed by laying the yarn in large tubs, covered with thick cloths, upon which aſhes are placed; and pouring hot water daily through it, turning the yarn frequently, until the bark comes off; and then it is ſpread on poles in the air. In general, hempen cloth is ſold as it comes from the loom, and is bleached by the purchaſer: ſome however is bleached, ready for weaving either by the weaver or by a whiteſter. This is done by boiling it in lye, made from aſhes, and frequently ſpreading it on graſs.

Although Hemp, in the proceſs of manufacturing, paſſes through the hands of the breaker, heckler, ſpinner, whiteſter, weaver, and bleacher; yet many of theſe operations are frequently carried on by the ſame perſon. Some weavers bleach their own yarn and cloth, others their cloth only; ſome heckle their tow, and put it out to ſpinning, others buy the tow, and put it out; and ſome carry on the whole of the trade themſelves.

When the trade is conducted by different perſons, their intereſts often claſh. By under-retting the Hemp, the grower increaſes the weight; by ſlightly bearing it, the heckler increaſes the quantity of tow, but leaves it fuller of bark; by drawing out the thread beyond the ſtaple, the ſpinner increaſes the quantity of yarn, but injures the quality; by forcing the bleaching, the whiteſter increaſes his profit, but diminiſhes the ſtrength of the yarn: in general, in manufacturing cloth, ſtrength is ſacrificed to fineneſs and colour. All this requires regulation*.

The above is the practice in the county of Suffolk, and probably differs in ſome particulars in other counties.

The expenſe of an acre of Hemp may be eſtimated at eight or nine pounds; and the average produce at forty-five ſtones, which at 7s. 6d. the ſtone is 16l. 17s. 6d. Some crops riſe to fifty-five ſtones, and even more; but there are bad ones ſo low as twenty-five: the price varies from 6s. to 9s. and even 10s. the ſtone. Some carry the expenſes ſo high as 14l.; but in that caſe the crop is ſo much greater and better, as to be valued at 20l.

The objections to this crop are, that its coming in the midſt of harveſt is embarraſſing; and that the attention it demands in every ſtate of its progreſs is too great, where it is only a ſecondary conſideration: it is however of great conſequence to the country, as a ſupport for the poor, and therefore deſerves every encouragement from the legiſlature*.

* Young's ann. 4o. 378, &c. 9. 378. Survey of Suffolk, 49.

CANNABIS LUTEA. See *Datiſca*.
——— SPURIA. See *Galeopſis*.
——— VIRGINIANA. See *Acnida*.]
CANNACORUS. See *Canna*.
[CANSCHI. See *Yrevia*.
CANTABRICA. See *Convolvulus*.
CANTERBURY BELLS. See *Campanula*.
CANTHARELLUS. See *Agaricus*.
CANTHARIFERA. See *Nepenthes*.
CAPA-VELLA. See *Cleome*.]
CAPE ASTER. See *Cineraria*.
—— JASMIN. See *Gardenia*.
CAPER. See *Capparis*.
[CAPER BEAN. See *Zygophyllum*.
CAPYLLUS VENERIS. See *Adiantum*.]
CAPNOIDES, CAPNORCHIS, and CAPNOS. } See *Fumaria*.
CAPPARIS. (Παρὰ τὸ καπτάνω δέω, *from its curing madneſs and melancholy*.)
Engl. *Caper-buſh*. Fr. *Caprier*, *Tapcrier*. *Lin. gen. n.* 643. *Reich.* 699. *Schreb.* 876. *Tournef.* 139. *Juſſ.* 243. Breynia. *Plum.* 11. Cadaba. *Forſk. Juſſ.* 243. Crateva. *Brown. t.* 28. *f.* 1.
Claſſ. 12. 1. Polyandria Monogynia.
Nat. order of *Putaminеæ*. *Capparides* Juſſ.
GENERIC CHARACTER.
CAL. *Perianth* four-leaved, coriaceous; *leaflets* ovate, concave, gibbous.
COR. *Petals* four, obtuſe, ſpreading, very large.
STAM. *Filaments* numerous, filiform, patulous. *Anthers* oblong, verſatile, inclined.
PIST. *Germ* pedicelled. *Style* none. *Stigma* obtuſe, ſeſſile.
PER. *Berry* corticoſe, one-celled, pedicelled.
SEEDS numerous, reniform, neſtling.
OBS. *The figure of the fruit is very different in different ſpecies. Hence the genus may be divided into two ſections: 1. with a berried fruit; 2. with a ſiliquoſe fruit.*
ESSENTIAL CHARACTER.
*Calyx* four-leaved, coriaceous. *Petals* four. *Stamens* long. *Berry* corticoſe, one-celled, pedicelled.
SPECIES.
1. Capparis ſpinoſa. *Prickly Caper-buſh.*
*Lin. ſpec.* 720. *Reich.* 2. 563. *mat. med.* 133. *hort. cliff.* 203. *Hall. helv. n.* 1077. *Scop. carn. n.* 632. *Smith ſpicil.* 2. 18. *t.* 20. *Blackw. t.* 417. *Gron. orient.* 154. *Bauh. hiſt.* 2. 63. *pin.* 480. 1. *Raii hiſt.* 1629. 1. *Ger.* 748. 2. *emac.* 895. 2. *Park.* 1023. 1.
β. C. ſol. acuto. *Bauh. pin.* 480. 2. *Raii hiſt.* 1629. 2. *Ger.* 748. 1. *emac.* 895. 1. *Park.* 1023. 2.
C. ſicula, &c. *Boce. ſic.* 79. *t.* 42. *f.* 3. *Raii hiſt. n.* 5.
*Peduncles one-flowered ſolitary, ſtipules ſpiny, leaves annual, capſules oval.*
[2. Capparis zeylanica.
*Lin. ſpec.* 720. *Reich.* 2. 564. *fl. zeyl. n.* 210. *Lour. cochinch.* 330.
C. ſpinoſa, fol. oblongis. *Burm. zeyl.* 53. *ind.* 138.
*Peduncles one-flowered ſolitary, ſtipules ſpiny, leaves ovate ſharp at both ends.*
3. Capparis horrida.
*Lin. ſyſt.* 488. *ſuppl.* 264.
*Peduncles axillary by two, ſtipules prickly, branches flexuoſe, leaves ovate-lanceolate mucronate ſmooth.*
4. Capparis ſepiaria.
*Lin. ſpec.* 720. *Reich.* 2. 564.
Arbuſcula baccifera ſcandens ſpinoſa, fol. buxi paliidioribus. *Plak. alm.* 27. *t.* 338. *f.* 3.
*Peduncles umbelled, ſtipules ſpiny, leaves annual ovate emarginate.*
5. Capparis frondoſa.
*Lin. ſpec.* 1674. *ſyſt.* 488. *Reich.* 2. 564. *Jacqu. amer.* 162. *t.* 104. *pict.* 79. *t.* 153.
*Peduncles umbelled, leaves every where crowded.*

* Young's Survey of Suffolk. 32.



6. Capparis

6. Capparis ferruginea.
*Lin. ſpec.* 721. *Reich.* 2. 564. *amen.* 5. 398. *Swartz obſ.* 208.
C. octandra. *Jacqu. amer.* 160. *t.* 100. (bad.)
Cratæva fruticoſa, &c. *Brown. jam.* 247. *t.* 28. *f.* 1. (good.)
*Peduncles unbelled, leaves permanent lanceolate tomentoſe beneath, flowers eight-ſtamened.*
7. Capparis Baducca.
*Lin. ſpec.* 720. *Reich.* 2. 564. *hort. cliff.* 204. 3.
Baducca. *Rheed. mal.* 6. 105. *t.* 57. *Burm. ind.* 118. *Raii hiſt.* 1630.
*Peduncles one-flowered, leaves perennial ovate-oblong, determinately crowded, naked.*
8. Capparis cynophallophora.
*Lin. ſpec.* 721. *ſyſt.* 488. *Reich.* 2. 565. *Jacqu. amer.* 158. *t.* 98. *pict.* 77. *t.* 145. (good.)
*Plum. ic.* 73. *f.* 1. *Brown. jam. t.* 27. *f.* 1. (Breynia 1.)
Cynophallophorus. *Pluk. alm. t.* 172. *f.* 4.
Acaciis affinis arbor ſiliquoſa, &c. *Sloan. jam.* 2. 59. *Raii dendr.* 102.
*Peduncles many-flowered terminal, leaves oval obtuſe perennial, glands axillary.*
[9. Capparis pulcherrima.
*Lin. ſpec.* 1674. *ſyſt.* 488. *Reich.* 2. 565. *Jacqu. amer.* 163. *t.* 106. *pict.* 80. *t.* 155.
*Peduncles racemed, leaves oblong obtuſe, fruits berried.*
10. Capparis linearis.
*Lin. ſpec.* 1674. *ſyſt.* 488. *Reich.* 2. 566. *Jacqu. amer.* 161. *t.* 102. *pict.* 79. *t.* 151.
*Peduncles ſubracemed, leaves linear.*]
11. Capparis Breynia.
*Lin. ſpec.* 721. *Reich.* 2. 566. *hort. cliff.* 204. 2. *Jacqu. amer.* 161. *t.* 103. *pict.* 79. *t.* 152. *Swartz obſ.* 210.
C. cynophallophora. *Lin. ſpec. ed.* 1. 503.
Breynia clæagni fol. *Breyn. ic.* 13.
Br. affinis arbor octandra. *Loeſl. it.* 207.
*Pedunculs racemed, leaves permanent oblong, calyxes and peduncles tomentoſe, flowers eight-ſtamened.*
[12. Capparis haſtata.
*Lin. ſpec.* 722. *ſyſt.* 488. *Reich.* 2. 566. *Jacqu. amer.* 159. *t.* 174. *f.* 56. *pict.* 78. *t.* 147.
*Peduncles many-flowered, leaves haſtate-lanceolate glittering.*
13. Capparis flexuoſa.
*Eadem cum cynophallophora. n.* 8.]
14. Capparis ſiliquoſa.
*Lin. ſpec.* 721. *Reich.* 2. 566.
*Peduncles many-flowered compreſſed, leaves permanent lanceolate-oblong acuminate dotted beneath.*
[15. Capparis grandis.
*Lin. ſyſt.* 488. *ſuppl.* 263.
*Corymbs terminating, leaves ovate acute ſmooth, fruit globular.*
16. Capparis magna.
*Lour. cochinch.* 331.
*Stem arborous, unarmed; leaves ternate lanceolate; corymbs terminating.*
17. Capparis falcata.
*Lour. cochinch.* 331.
*Stem arborous, unarmed; leaves ternate ſickle-ſhaped, racemes looſe terminating.*
18. Capparis cantonienſis.
*Lour. cochinch.* 331.
*Peduncles racemed, ſtipules thorny, leaves ovate acuminate wrinkled.*
19. Capparis toruloſa.
*Swartz prodr.* 81.
Breynia arboreſcens, &c. *Brown. jam.* 246. 2.
*Peduncles ſubbiflorous round terminating, leaves lanceolate-oval dotted with white underneath, pods round linear toruloſe.*
20. Capparis longifolia.
*Swartz prodr.* 81. *Pluk. phyt. t.* 327. *f.* 6.
*Leaves linear-lanceolate dotted with meal underneath.*]

*Mr. Miller has alſo the following ſpecies.*

21. Capparis arboreſcens.
*Mill. dict. n.* 3.
*Leaves lanceolate-ovate, perennial; ſtem arboreſcent.*
22. Capparis racemoſa.
*Mill. dict. n.* 5.
*Leaves ovate oppoſite perennial; flowers racemed.*
23. Capparis fruticoſa.
*Mill. dict. n.* 7.
*Leaves lanceolate acute crowded perennial, ſtem ſhrubby.*
24. Capparis conferta.
*Mill. dict. n.* 8.
C. alis arboreſcens lauri fol., fructu oblongo ovato.
*Plum. cat.* 7.
*Leaves lanceolate alternate on very long petioles; flowers crowded.*
25. Capparis triſlora.
*Mill. dict. n.* 10.
*Leaves lanceolate nerved perennial, peduncles three-flowered.*

DESCRIPTIONS, *&c.*

This genus conſiſts of ſhrubs. The leaves are ſimple, in the berry-bearing ſorts having frequently two ſpines at the baſe, but in thoſe which bear pods commonly naked or biglandular. Flowers ſolitary axillary or in a kind of corymb, terminating[a]. Some of the ſpecies have a berry: as *ſpinoſa, zeylanica, horrida, ſepiaria, ferruginea, pulcherrima, grandis, magna, falcata, cantonienſis.* Others have a ſilique or pod for a fruit: as *frondoſa, Baducca, cynophallophora, linearis, Breynia, haſtata, toruloſa, longifolia*[b]. Swartz unites *Moriſonia* to this genus, under the name of *Capparis Moriſonia.*]

1. The common Caper-buſh is a low ſhrub, generally growing out of the joints of old walls, the fiſſures of rocks, and among rubbiſh. The ſtems are woody, and covered with a white bark. [They are trailing, round, ſmooth, and branching: branches alternate, ſpreading, often downy, leafy. Leaves alternate, on ſhort foot-ſtalks, ſpreading, oval or roundiſh, in the wild plant often terminated by a little ſharp point, which diſappears by culture, entire, veiny, ſucculent, bright green, deciduous. Scopoli adds, that they are four times as long as the foot-ſtalks. Stipules none, but in their ſtead two ſpines at the baſe of the foot-ſtalks, acute, ſomewhat recurved, yelloviſh, in the cultivated plant nearly obliterated. Bractes none. Flowers numerous, axillary, ſolitary, large, handſome, inodorous. Peduncles round, longer than the leaves[c], reddiſh, nearly horizontal, but finally pendulous[d]. Calyx of four unequal, concave leaves, tipped with purple[e]; three of the leaflets are long and narrow, the fourth is larger, and turned downwards[f]. Petals much larger than the calyx, ſpreading, obovate, waved, white with a faint tincture of red. Haller remarks, that they are tender and flaccid, that two of them are continued ſome way into the calyx, and the other two free. Stamens very numerous (about ſixty, *Scop.*), the length of the petals, ſpreading, ſlender, in the upper part pale purple like the anthers. According to Scopoli, they are longer than the petals, and unequal: the anthers yellow, with a whitiſh pollen. Germ oval, ſmall, green, ſtanding on a round purpliſh foot-ſtalk, which is longer than the ſtamens. Capſule (Linneus calls it a berry) oblong-oval, coriaceous[g].

It grows wild in the ſouthern countries of Europe, and in the Levant, on rocks, walls, and in dry places. Mr. Ray obſerved it on the walls of Rome, Sienna, and Florence wild, and about Toulon cultivated. I remarked it at Verona.

It is ſurpriſing, ſays Dr. Smith, that this beautiful ſhrub, which is as common in the South of France as the Bramble with us, and which grows luxuriantly in the open air when trained againſt a wall even at Paris, ſhould be almoſt unknown in the Engliſh gardens, where it can ſcarcely be made to flower, except in a ſtove with all poſſible care.

Gerarde tells us, that he put ſome ſeeds into the brick walls of his garden, "which did ſpring and grow green:" and Bradley ſowed ſome ſeeds, which he procured from Italy, in the garden walls of

[a] Juſſieu gen. [b] Swartz obſ. [c] Smith. [d] Scopoli. [e] Smith. [f] Haller. [g] Smith.

Campden houſe near Kenſington, about the year 1716.] Mr. Miller mentions an old plant growing there, which reſiſted the cold many years, and annually produced many flowers, but the young ſhoots were frequently killed to the ſtump during the winter.

[The flower-buds, which are produced in great plenty on the wild plant, are well known as a pickle. The unripe fruit is in Italy prepared in the ſame manner. Every part of the plant in a recent ſtate is highly acrid and burning to the taſte[a].

β. This, which is a mere variety, was obſerved by Boccone near Girgenti and Terra di Palmi in Sicily. It has the flower, capſule and ſeed of the common ſort; but the leaves are ſharp at the end.

2. Stem ſhrubby, ſix feet high, upright but weak: branches divaricating. Leaves alternate, remote, quite entire, running into the petioles, which are very ſhort; at their origin are two ſharp, recurved ſpines. Peduncles axillary, ſingle or two together, one-flowered. Petals white, oblong, ſpreading, nearly equal; with a lateral, prominent, cloven nectary. Stamens thrice the length of the corolla[b].

Linneus remarks, that it differs little from the firſt ſpecies; and that it is difficult to determine whether they be really diſtinct, ſo long as the fruit of this is unknown. Loureiro deſcribes it to be a roundiſh, fleſhy, black, ſmall, one-celled berry, placed on a long pedicel, and containing three ſeeds. Native of Ceylon and Cochinchina, in hedges.

3. This is a ſtiff tree, with double ſtipular prickles, red and rigid, from the baſe of the leaves, which are petioled, and end in a ſmall ſpine. Peduncles in pairs, one-flowered. Found in Coromandel by Koenig[c].

4. Branches round and woody. Spines ſtipular, double, recurved, ſhort, black. Leaves ſubpetioled, naked, quite entire. Umbels terminating, ſimple, many-flowered; with a ſhort common peduncle. Native of the Eaſt-Indies[d].

5. Height about ſeven feet, extending as far as twenty. Branches very few and ſcarcely divided. Leaves acute, ſhining, waved, quite entire, ſubcoriaceous, petioled, varying much in ſize, frequently a foot long. Common peduncle round, ſhining, erect, terminal, ſolitary, bearing at the end in an umbel a few flowers without ſmell, green or purple, an inch in diameter: after fecundation the petals are revolved, and the ſtamens variouſly twiſted. Pods an inch or an inch and half in length, ſhining, dark purple, with a whitiſh fleſh[e]. Native of South America, in thickets.

6. This is a ſmall tree or a ſhrub, with ſtriated rufous or ferruginous coloured branches. Leaves oppoſite, ovate-lanceolate, quite entire, lanuginous-aſh-coloured beneath, ſmooth on the upper ſurface. Petioles ferruginous, ſhort. Flowers in a ſort of corymb, terminating, on biſid or triſid peduncles. Corollas white. Calyx quadrifid, flat at the baſe, and permanent: ſegments ſpreading, equal, acute. Petals equal, concave, the claws the length of the calyx, into the diviſions of which they are inſerted. Nectaries four, ovate, between the petals and the column of the piſtil. Filaments eight, ſeldom more, fixed to the pedicel of the germ, ſhorter than the corolla: anthers oblong, inſerted into the filaments. Germ ovate, on a round pedicel, half the length of the corolla: ſtigma ſeſſile, head-club-ſhaped. Berry fleſhy, oblong. Seeds few (five or ſix) oblong. The flowers are fragrant[f]. The plant is ſtrongly impregnated with an acrid volatile ſalt, like the Muſtard tribe; and hence in Jamaica, where it grows wild, it has obtained the name of the Muſtard ſhrub[g]. Browne, miſled by this circumſtance, and the regularity in form and diſpoſition of the calyx, petals and nectaries, has referred this plant to the Tetradynamia claſs.

7. Leaves ſmooth on both ſides, obſcurely netted, eſpecially beneath[h].] According to Mr. Miller, it has a tree-like ſtem dividing into ſmooth branches, having no ſpines on them; the peduncles come out ſingly from the axils: the flowers are like thoſe of the firſt, but are much larger, as are alſo the buds.

[It is a native of the Eaſt-Indies, where it is cultivated for the beauty of the flowers, which are produced in the month of january[i].

8. This ſpecies varies conſiderably in its habit or general appearance, according to the ſoil in which it is found: in ſunny hedges it is weak, thin, and as it were ſupported by the neighbouring vegetables; but in fields and towards the ſhores it is a kind of ſhrub or little tree of twelve feet high, and of a pretty appearance. The leaves are alternate, petiolated, ſmooth on both ſides, thickiſh, ſomewhat ſtiff and about three inches long: they are alſo either ovate, obovate, or even lance-ovate, but more frequently oblong. In the axilla of the leaves there is a roundiſh ſolitary gland, which is ſcarce ever miſſing. The flowers are beautiful, very patulous, and extremely fragrant, of a white or greeniſh white; the ſtamens often four inches long. The ſilique about half a foot long, of various degrees of thickneſs, outwardly green or greeniſh purple with a red ſuture; and when ripe ſplit longitudinally, each part rolling back to the very footſtalk, and ſucceſſively letting fall the ſeeds, which are coated with a white bark externally, and greeniſh internally, and are ſurrounded by a ſcarlet fleſh or pulp.

Native of the Weſt-Indies[k].] Mr. Miller ſays, that it was ſent him from Carthagena, by Mr. Robert Millar, ſurgeon.

[9. This is an upright ſhrub, in open ſituations only two or three feet high, but in woods twelve. Branches ſmooth. Leaves ſhining, quite entire, coriaceous, alternate, on ſhort petioles, and frequently ten inches long. Raceme terminating, ſimple, erect, thick, ſolitary, half a foot long, very ſpecious. Flowers beautiful, pale yellow, of a very ſweet ſcent. Filaments at firſt white, then bright purple. Each raceme has only one or two berries, from two to four inches in diameter variegated green and brown on the outſide; the fleſh or pulp when unripe hard and having little ſcent; but when ripe ſoft, nauſeous, and ſo fetid that no animal will touch it. Native of Carthagena in New Spain, on declivities of the mountains[l].

10. This ſpecies, which grows in great plenty on the woody hills of Carthagena, is an elegant, upright, branchy tree, about fifteen feet high: the leaves are linear, coriaceous, entire, unveined, obtuſe, with a very protuberant midrib: the ſides are often revolute. The racemes are terminal, or axillary, ſupporting about ten flowers, more or leſs, and they commonly grow in an horizontal poſition. The flowers are white, inodorous, and about half an inch in diameter. The fruits are orange-coloured with a redneſs intermixed, and about an inch diameter[m].

11. This is a ſmall tree, with an upright, ſmooth trunk, and flexuoſe branches, ſcarred with the fallen leaves; twigs angular and pubeſcent. Leaves alternate, ſcattered, acuminate, nerveleſs, ſmooth on the upper ſurface and ſhining, beneath hoary-ferruginous or aſh-coloured, covered with very minute ferruginous dots. Petioles angular, hoary-ferruginous. Peduncles terminating, ſomewhat branched, forming a ſort of umbel, compreſſed, marked with lines, ferruginous. Flowers rather large. Leaflets of the calyx reflex, convex, white on the inſide, ferruginous beneath and ſomewhat rugged. Petals twice as large as the calyx, entire, white tinged with purple, ſpotted with ruſt-colour on the outſide, deciduous. Nectariferous glands four, ſmall, ovate, acute, compreſſed, permanent. Filaments long, meeting at the baſe round the germ, with a pale red pile on them. Anthers almoſt erect, acuminate, curved inwards, yellow. Germ elongated, minute, on a very ſhort pedicel. Style the length of the

[a] Smith. [b] Linn. ſuppl. and Retz. obſ. 5. [c] Swartz. [d] Linn. ſpec. [e] Browne. [f] Jacquin. [g] Linn. [h] Hort. malab. [i] Ibid. [k] Jacquin. [l] Ibid.

ſtamens.

ſtamens. Stigma thickened, obtuſe, ferruginous. The fruit is a long, cylindric, ſubtoruloſe, two-valved legume; containing ſeveral, kidney-ſhaped ſeeds.

It is a native of dry coppices near the ſea in Jamaica[a], and moſt of the other iſlands in the Weſt-Indies.

12. A native of Carthagena, growing in woody places. It is an upright, weak ſhrub, divided into a few very long branches, often ſix feet long. The leaves are alternate, petiolate, coriaceous, ſtiff, and from three to ſeven inches in length, and recede ſometimes from an oblong and entire figure almoſt to a haſtated one on the ſame ſhrubs. The common footſtalks of the flowers are cluſtery, terminal, almoſt half a foot long, and ſupport about eight flowers, which are ſomewhat odorous, purple, and nearly two inches in diameter.

13. This is in no wiſe different from *Capparis cynophallophora* of Linneus and Jacquin. It was determined from an imperfect ſpecimen in the Linnean herbarium; and firſt deſcribed, in the *Amoenitates Academicae* (5. 398.) under the name of *Morifona flexuoſa*[e].

14. According to Linneus, this reſembles the eighth ſpecies. The leaves are extremely acuminated, the upper ſurface is glittering, and the lower is powdered with ferruginous duſt[f].]

Mr. Miller ſays, it riſes with a ſhrubby ſtalk to the height of eight or ten feet, ſending out many woody branches, covered with a reddiſh brown bark, and having oblong, ſpear-ſhaped, ſtiff leaves, with punctures on their under ſide; the peduncles are long, ſlender, compreſſed and axillary, each ſuſtaining a ſmall, white flower, which is ſucceeded by an oval pod, containing many, ſmall, kidney-ſhaped ſeeds. It was ſent him from Tolu in America.

[The ſpecimen in the Linnean herbarium ſeems to be only a variety of *Capparis Breynia*. Browne's ſynonym (247. 2.) belongs to *Capparis toruloſa* (n. 19.): and Plukenet's (327. 6.) to *C. longifolia* (n. 20.)[g]

15. This is a large hoary tree. Leaves alternate quite entire, veined. Stipules none. Corymbs, when fruit-bearing, elongated into a raceme. Flowers whitiſh-yellow. Fruits very large, and globular. Found in Ceylon by Koenig[h].

16. This is a middling-ſized tree, with ſpreading, unarmed branches. Leaves quite entire, ſmooth. Flowers large, white, in ſpreading corymbs. Calyx wheel-ſhaped, with lanceolate, flat, interrupted leaflets. Petals broad-ovate, ſharp at both ends, many-nerved, veined, ſpreading, equal, with long claws. Filaments twenty-four, very long. Anthers three-celled, oblong, recurved. Germ roundiſh, pedicelled. Style ſhort. Berry roundiſh, two inches long, fleſhy, eatable, with a dotted, rough rind, of a greeniſh aſh-colour, within one-celled, containing many, kidney-ſhaped neſtling ſeeds.

Native of Cochinchina, on the banks of rivers. Much reſembling *C. grandis*, and differing from it principally in its ternate leaves.

17. This is a large tree, with ſpreading, unarmed branches. Leaves ovate-lanceolate, the lateral ones ſickle-ſhaped at the baſe, quite entire, ſmooth, petioled. Corolla white, reſembling that of the foregoing ſort. Stamens eighteen. Berry oblong, red, large, one-celled, pedicelled, with many neſtling ſeeds.

18. Stem ſhrubby, upright, branched. Leaves quite entire, ſmooth, alternate. Flowers white, axillary and terminating. Calyx five-leaved; leaflets oblong, concave, coloured. Petals five, oblong, ſpreading, equal to the calyx. Filaments long. Berry ovate, ſmall, brown, pedicelled, containing many ſeeds. This and the foregoing are natives of China near Canton[i].

19. This grows into a ſhrubby tree, and is a native of Jamaica[k].

[a] Swartz. [b] Swartz obſ. 211. [c] Linn. ſuppl. [d] Browne. [e] Swartz obſ. 211. [f] Spec. [g] Loureiro.



20. This alſo is a native of Jamaica.]

21. This ſort I received from Carthagena in New Spain, near which place it grows naturally. This riſes with a woody ſtem to the height of twelve or fourteen feet, ſending out many lateral branches, covered with a ruſſet bark, garniſhed with oblong oval leaves, ſtanding upon long foot-ſtalks; the flowers are produced from the ſide of the branches, ſingle, ſtanding upon long peduncles, and are like thoſe of the Baducca.

22. This was ſent me from the ſame country. It riſes with a trunk about twenty feet high, ſending out many long ſlender branches, which are covered with a brown bark, and garniſhed with leaves like thoſe of the Bay-tree, but longer and deeply ribbed on their under ſide, ſtanding upon pretty long foot-ſtalks oppoſite. The flowers are produced upon long branching peduncles, which terminate the branches, each ſuſtaining two or three flowers, which are large, white, and are ſucceeded by pods two or three inches long, the thickneſs of a man's little finger, which are filled with large kidney-ſhaped ſeeds: theſe pods have a thick fleſhy cover.

23. This riſes with a ſhrubby ſtem to the height of twelve or fourteen feet, ſending out many ſtrong lateral branches, covered with a dark-brown bark, garniſhed with ſpear-ſhaped pointed leaves, placed alternately, having very ſhort foot-ſtalks; the leaves are of a thicker conſiſtence than thoſe of the Bay-tree; at the foot-ſtalk of each leaf comes out a ſingle flower, almoſt the whole length of the branches, they are ſmall, and ſtand upon ſhort peduncles; the anthers are of a purpliſh colour, but the ſtamens are white. This ſort was ſent me from Tolu.

24. This ſort riſes with a ſhrubby ſtalk to the height of ten or twelve feet, ſending out ſlender horizontal branches, which are covered with a reddiſh bark; the joints of theſe branches are far diſtant; at each of theſe come out ſeveral leaves in cluſters, without order, ſtanding upon pretty long foot-ſtalks; they are ſix inches long, and three broad in the middle, and as thoſe of the Laurel, of a ſhining green, ſmooth on their upper ſide, but have many tranſverſe ribs on their under ſide, which are prominent. I received this ſort from Tolu, with the former.

25. This has ſlender ſhrubby ſtalks, which riſe ſeven or eight feet high, ſending out many woody branches, with very long, nerved, ſpear-ſhaped leaves. The flowers come out at the ends of the branches, three ſtanding upon each peduncle; they are ſmall, white, and are ſucceeded by oval fruit.

PROPAGATION AND CULTURE.

1. The plants of the firſt ſort are with difficulty preſerved in England, for they delight to grow in crevices or rocks, and the joints of old walls or ruins, and always thrive beſt in an horizontal poſition; ſo that when they are planted either in pots, or the full ground, they rarely thrive, though they may be kept alive for ſome years. They are propagated by ſeeds in the warm parts of Europe, but it is very difficult to get them to grow in England. I have ſeveral times ſowed theſe ſeeds without ſucceſs, as have many other perſons; I never had raiſed any of the plants from ſeeds, excepting in the years 1738 and 1765. In 1738 I had three plants come up in an old wall, which being young and tender, were deſtroyed in the year 1740; but in the year 1765, I raiſed a good number of plants from ſeeds, which were ſown the year before.

The roots of this plant are annually brought from Italy, by the perſons who import Orange-trees, ſome of which have been planted in walls, where they have lived a few years, but have not continued long.

[In order to have them flower here, they are now kept in a ſtove.]

The other ſorts being natives of hot countries will not live through the winter in England without the aſſiſtance of a ſtove. They are propagated by ſeeds, which muſt be procured from the countries where they grow naturally, for they do not produce any in England; theſe muſt be ſown in ſmall pots, filled

filled with light ſandy earth, and plunged into a hot-bed of tanner's-bark; which ſhould be now and then refreſhed with water, but by no means ſhould have it given in too great plenty: theſe ſeeds frequently remain in the ground a year before they vegetate, therefore the pots in which they are ſown ſhould be protected in winter; and the ſpring following they muſt be plunged into a freſh hot-bed of tanner's-bark, which will bring up the plants, if the ſeeds were good; when the plants appear they muſt have little water, but much air in warm weather: when they are large enough to remove, they muſt be each tranſplanted into a ſeparate ſmall pot; filled with the ſame earth, and then plunged into the hot-bed again, obſerving to ſhade them until they have taken freſh root; after which they muſt have freſh air admitted to them every day, in proportion to the warmth of the ſeaſon. In the autumn they muſt be removed into the ſtove, and plunged into the bark-bed, where they ſhould conſtantly remain, and will require the ſame treatment as other tender exotic plants from the ſame countries; with this difference only, that they require little water, eſpecially in winter, for the roots of theſe plants are very ſubject to rot with wet.

If the ſeeds are brought over in their capſules, they will keep much better than without them; but theſe ſhould be ſecured from inſects, by wrapping them in tobacco leaves which are well dried; without this precaution, the ſeeds will be deſtroyed before they arrive.

[The ſeeds in general germinate immediately, and therefore cannot well be ſent dry to Europe. This, with the difficulty of preſerving the plants, accounts for the preſent ſcarcity of them in our ſtoves, although many of them were cultivated by Mr. Miller.]

CAPPARIS Fabago. See *Zygophyllum*.

CAPRARIA. (*From Caper, a Goat. Goat-weed.*)
*Lin. gen. n.* 768. *Reich.* 827. *Schreb.* 1030. *Gærtn. t.* 53. *Juſſ.* 118.

Claſſ. 14. 2. Didynamia Angioſpermia.

Nat. order of *Perſonatæ*. *Scrophulariæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted, oblong; *diviſions* linear, erect, diſtant, permanent, ſhorter than the corolla.

COR. monopetalous, bell-form, five-cleft, nearly equal; *diviſions* oblong, acute; the two upper ones more erect.

STAM. *Filaments* four, ſubulate, inſerted into the baſe of the corolla, ſhorter by half than the corolla, the two lower ones rather ſhorter than the others. *Anthers* cordate.

PIST. *Germ* conical. *Style* filiform, longer than the ſtamens. *Stigma* cordate, bivalve, equal (bilamellate, *G.*)

PER. *Capſule* oblong-conical, compreſſed at the tip, bilocular, bivalve, with a contrary partition, (which is doubled by the bending in of the edge of the valves.)

SEEDS very many, roundiſh.

ESSENTIAL CHARACTER.

*Cal.* five-parted. *Cor.* bell-form, five-cleft, acute. *Capſ.* bivalve, bilocular, many-ſeeded.

SPECIES.

1. Capraria biflora. *Shrubby Goat-weed*, or *Sweet-weed.*
*Lin. ſpec.* 875. *Reich.* 3. 168. *Hort. cliff.* 320. *Jacqu. amer.* 182. *t.* 115. *pict.* 90. *t.* 174. *Brown. jam.* 268. *Gærtn. fruct.* 1. 250. *Swartz obſ.* 239.
C. curaſſavica. *Herm. par. t.* 110.
Gratiolæ affinis, &c. *Comm. hort.* 1. 79. *t.* 40.
Lyſimachiæ peruvianæ affinis, &c. *Pluk. alm.* 237. *t.* 98. *f.* 4.
*Leaves alternate; flowers in pairs.*

2. Capraria durantifolia.
*Lin. ſpec.* 876. *Reich.* 3. 169. *amæn.* 5. 399.
Stemodia durantifolia. *Swartz obſ.* 240.
Phelypæa erecta, &c. *Brown. jam.* 269.
Veronica caule hexangulari, &c. *Sloan. jam.* 1. 196. *t.* 124. *f.* 2.

*Leaves in threes toothed, peduncles ſolitary, branches alternate.*

3. Capraria cruſtacea.
*Lin. ſyſt.* 567. *Reich.* 3. 169. *mant.* 87. *Burm. ind.* 133.
Caraniſi minus. *Rumph. amb.* 5. 461. *t.* 170. *f.* 3.
*Creeping; leaves oppoſite ovate ſubpetioled crenated.*

4. Capraria lanceolata. *Willow-leaved Capraria.*
*Lin. ſyſt.* 567. *ſuppl.* 284. *Ait. hort. kew.* 2. 354.
*Leaves oppoſite linear-lanceolate quite entire; racemes terminating compound.*

5. Capraria undulata. *Waved-leaved Capraria.*
*Lin. ſyſt.* 567. *ſuppl.* 284. *L'Herit. ſert. angl. t.* 25. *Ait. hort. kew.* 2. 354.
*Leaves oppoſite, ovate-oblong quite entire waved; the upper ſubcordate verticilled; racemes ſpike-form.*

6. Capraria lucida. *Shining Capraria.*
*Ait. hort. kew.* 2. 353.
*Leaves oppoſite oblong acute finely ſerrulate gloſſy; petioles winged; peduncles three-flowered.*

7. Capraria humilis. *Dwarf Capraria.*
*Ait. hort. kew.* 2. 354.
*Pubeſcent; leaves oppoſite or in threes ovate ſerrate petioled; peduncles axillary ſhorter than the petiole.*

DESCRIPTIONS, &c.

1. This is a ſhrub, ſeldom exceeding four feet in height. Branches long, ſomewhat woody, erect, roundiſh, ſometimes ſlightly hirſute. Leaves oblong, acuminate to both ends, ſerrate above, ſmooth, ſeſſile, an inch and half long, in the ſhade near five inches in length; on ſandy coaſts ſucculent, thick and brittle, as are alſo the calyxes. Peduncles one-flowered, ſlender, axillary, one or two very ſeldom three, much ſhorter than the leaves. Flowers without ſcent; calyx ſmooth, very deeply five-parted; corolla white, the diviſions hirſute at the baſe; anthers twin; germ ovate, furrowed; ſtigma headed, acute. Capſule furrowed on both ſides, the length of the calyx. Seeds very ſmall.

It is very common in Jamaica: in all the Caribees, and the neighbouring continent. It is one of the plants which was ſuppoſed to be the Tea of the Chineſe, and is called in the French iſlands *Thé du pays*[a]. Cultivated 1759, by Mr. Miller[b].

2. Stem about a foot high, obtuſely hexangular. Leaves two, three or four together, ſeſſile, lanceolate, ſerrate, quite entire towards the baſe, but toothed at the baſe itſelf. Branches ſhorter than the ſtem, ſimple. Flowers axillary. Peduncles the length of the flower. Calyx five-parted, leaflets lanceolate, acuminate. Corolla ringent, tube the length of the calyx, upper lip erect, broader, emarginate, lower, three-parted, equal. Stamens twin, the length of the calyx. Stigma obtuſe, two-lobed. Capſule ovate, acute, two-celled. Seeds many, roundiſh[c]. Native of Jamaica, in ſloughs where mud has been worked up by carriages.

3. It much reſembles *Capr. grandiflora* (which is now removed into the genus *Lindernia*) but the leaves are more ovate and petioled. It is a native of Amboina and China[d].

4. Shrubby. Found at the Cape of Good Hope, by Thunberg and Maſſon. Introduced in 1774[e].

5. Shrubby. Leaves ſcattered, in a ſort of whorl, unequally approximating. Flowers in an almoſt ſimple terminating raceme[f]. Obſerved at the Cape of Good Hope, by Thunberg and Maſſon. Introduced in 1774. It flowers from march to july[g].

6. Smooth. Stems quadrangular. Leaves an inch and half long, with petioles one-third of their length. Peduncles axillary, oppoſite, a little longer than the petioles, quadrangular, three-flowered: the outer pedicels ſometimes three-flowered. Bractes ſubulate, the length of the pedicels. Segments of the calyx ſubulate, three lines in length. Corolla ſalver-form, tube cylindric, pale purple, a little longer than the calyx, gibbous on the outſide at the baſe, above that a little bent, then erect, a little elongated

[a] Jacquin. [b] Hort. kew. [c] Linn. amoen. See Stemodia.
[d] Linn. mant. [e] Linn. ſuppl. and Hort. kew.
[f] L'Herit. fert. [g] Hort. kew.

on the outside, so that the border is entirely horizontal; segments ovate, obtuse, equal, reddish purple with a dark purple spot near the throat, which is hairy. Anthers oblong, compressed. Germ roundish: style shorter than the stamens: stigma large, convex, oblique. Biennial. Native of the Cape; observed by Masson. It flowers in april and may; and was introduced in 1774.

7. This is an annual. Found in the East-Indies, by John Gerard Koenig, M. D. Introduced 1781, by Sir Joseph Banks, Bart.[a].

PROPAGATION AND CULTURE.

The first sort is propagated by seeds, which must be sown upon a hot-bed in the spring of the year, and the plants must be brought forward by planting them upon a second hot-bed: about the middle or end of june they may be transplanted either into pots of rich earth, or a warm border, and may then be exposed to the open air, where they will perfect their seeds in autumn.

[The Cape sorts may be increased by cuttings, and are not so tender as the foregoing.

CAPPARIS. See *Lecbea*, *Linderuia*, and *Scoparia*.

CAPRIFICUS. See *Ficus*.]

CAPRIFOLIUM. See *Lonicera*.

CAPSICUM. (*From* Κάπτω, *mordeo, to bite: on account of the biting heat of the seed and pericarp. Some derive it from Capso, a chest.*)

Engl. *Guinea Pepper.*

Fr. *Poivre d'Inde* ou *de Guinée.*

*Lin. gen. n.* 262. *Reich.* 269. *Schreb.* 338. *Tourn.* 66. *Juss.* 126. *Gærtn. t.* 132.

Class. 5. 1. Pentandria Monogynia.

Nat. order of *Luridæ*. *Solanæ* Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-cleft, erect, permanent.

COR. monopetalous, rotated; *tube* very short. *Border* half-five-cleft, spreading, plaited; *divisions* broad, acute.

STAM. *Filaments* five, subulate, very small. *Anthers* oblong, converging.

PIST. *Germ* superior, ovate. *Style* filiform, longer than the stamens. *Stigma* obtuse.

PER. *Berry* without pulp, approaching to an ovate figure, bilocular, hollow, coloured. *Receptacles* growing to the dissepiment, exsuccous.

SEEDS very many, reniform, compressed.

OBS. *The figure of the pericarp is indeterminate: the genus differs from its congeners in having a baccated exsuccous pericarp.*

ESSENTIAL CHARACTER.

*Corol.* rotated. *Berry* exsuccous.

SPECIES.

1. Capsicum annuum. *Annual Capsicum*, or *Guinea Pepper.*
   *Lin. spec.* 270. *Reich.* 521. *mat. med.* 66. *hort. cliff.* 59. *upf.* 47. *fl. zeyl. n.* 92. *Gærtn. fruct.* 2. 241. *Lour. cochinch.* 127. *Woodv. med. bot.* 391. *t.* 144. *Plenck, ic. t.* 107.
   α. Piper indicum vulgatissimum. *Bauh. pin.* 102. *Raii hist.* 676. *Blackw. t.* 129. *Besl. eyst. aut.* 1. *t.* 6—13.
   Capsicum longioribus filiquis. *Ger.* 392. *f.* 1. *emac.* 364. *f.* 1. *Park. theat.* 356.
   C. filiquis longis propendentibus. *Tournef. inst.* 152. *Long-podded Capsicum.*
   β. C. cordiforme. *Mill. dict. n.* 2. *Heart-shaped Guinea Pepper.*
   C. filiqua propendente oblonga & cordiformi. *Tourn. inst.* 152.
   γ. C. tetragonum. *Mill. dict. n.* 3. *Bell Pepper.* See n. 4.
   δ. C. angulosum. *Mill. dict. n.* 4. *Bonnet Pepper.*
   C. fil. furrectis cordiform. angulatis. *Tourn. inst.* 153.
   ε. C. cerasiforme. *Mill. dict. n.* 5. *Cherry Pepper.*
   C. fil. surr. Cerasi forma. *Tourn. inst.* 153.
   ζ. C. oliviæforme. *Mill. dict. n.* 6. *Olive Pepper.*
   C. fil. olivæ forma. *Tourn. inst.* 153.
   *Stem herbaceous, peduncles solitary.*
2. Capsicum baccatum. *Small-fruited Capsicum*, or *Bird-Pepper.*
   *Lin. syst.* 226. *Reich.* 521. *mant.* 47. *Plenck, ic. t.* 108. *Lour. cochinch.* 127.
   C. frutescens β. *Lin. spec.* 271. *Mill. dict. n.* 9, 10.
   C. fructu minimo conico rubro. *Brown. jam.* 176.
   C. rubrum minimum. *Rumph. amb.* 5. *t.* 88. *f.* 2.
   C. minus, fr. parvo pyramidali erecto. *Sloan. jam.* 1. 240. *t.* 146. *f.* 2.
   C. brasilianum. *Clus. exot.* 340. *f.* 2.
   Piper siliquosum magnitudinis baccarum asparagi. *Bauh. hist.* 2. 944.
   P. brasilianum. *Clus. cur.* 55.
   *Stem shrubby smooth and even, peduncles in pairs.*
3. Capsicum sinense. *Chinese Capsicum.*
   *Lin. syst.* 226. *Jacq. hort.* 3. *t.* 67.
   *Stem shrubby, flowers and fruits pendulous.*
4. Capsicum grossum. *Heart-shaped Capsicum*, or *Bell Pepper.*
   *Lin. syst.* 226. *Reich.* 522. *mant.* 47. *Thunb. jap.* 93.
   C. fructu longo, ventre tumido, per summum tetragono. *Tourn. inst.* 152. C. tetragonum. *Mill. dict. n.* 3.
   Piper indicum, siliquis furrectis rotundis, maximum. *Bauh. pin.* 103. *Raii hist.* 677.
   P. ind. *Besl. eyst. aut.* 1. *t.* 11. *f.* 1.
   β. C. fructu bifido. *Tourn. inst.* 152. *mant.*
   *Stem undershrubby, fruits thickened various.*
5. Capsicum frutescens. *Shrubby Capsicum.*
   *Lin. spec.* 271. *syst.* 227. *Reich.* 522. *hort. cliff.* 60. *Lour. cochinch.* 128.
   C. indicum. *Rumph. amb.* 5. 247. *t.* 88. *f.* 1, 3, 4.
   Capo-molago. *Rheed. mal.* 2. *t.* 56.
   *Stem shrubby roughish, peduncles solitary.*

DESCRIPTIONS, &c.

1. [Stem herbaceous, annual, two feet high, upright, branched: branches short, ascending. Leaves ovate-lanceolate, quite entire, smooth, dark green. Flowers white, lateral, solitary[a]. The fruit is a berry, varying much in size and shape, extremely smooth and shining on the outside, scarlet or yellow, inflated or hollow, two-celled, sometimes three-celled; the partitions at top commonly failing towards the axis. Receptacle at the bottom of the berry solid, ovate-conical, intimately connected with the partitions, so that some of the seeds are sometimes fixed to the partitions themselves. Seeds kidney-shaped or round, beaked, smooth, whitish or pale straw-coloured. Two seems to be the natural number of the cells; for berries which are three-celled, become two-celled towards the top[b].

Capsicum varies extremely in its fruit; hence Gerard, Parkinson, Ray, Clusius, Tournefort, and others have many varieties. Parkinson has twenty; Ray has fifteen, besides many from Marcgraaf and Hernandez. Long says that there are fifteen varieties cultivated in Jamaica.

Mr. Miller has ten species, besides varieties, but several of his species are nothing more than varieties; and indeed some of Linneus's species seem to be nothing more.]

α. The common long-podded Capsicum is frequently cultivated in our gardens. It varies, 1. with oblong fruit growing erect; 2. with a divided fruit; 3. with oblong and short pods growing erect; 4. with a taper fruit a span long. And of all these there is both red and yellow fruit.

β. The Capsicum with heart-shaped pods has also several varieties: 1. with round hanging pods; 2. with larger and rounder pods; 3. with the largest round pods; 4. with upright heart-shaped pods; 5. with upright round pods. These also have both red and yellow fruit.

γ. [See n. 4. The *Capsicum tetragonum* however of Miller seems to be a variety of *Capsicum annuum*, although it has this singularity, that the fruit is constantly observed to be three-celled[c].

[a] Loureiro. [b] Gærtner. [c] Retz. obs. 1, 13. n. 21.

[a] Hort. kew.

3. Bonnet Pepper has broad wrinkled leaves. The fruit is alſo furrowed and wrinkled, generally growing upright, and of a beautiful ſcarlet colour. Some of the fruits have their tops compreſſed like a bonnet, whence the name; others are bell-ſhaped.

4. Cherry Pepper was ſent from the Spaniſh Weſt Indies. It does not grow ſo tall as the others, but ſpreads near the ground. The leaves come out in cluſters, are of a ſhining green, and ſtand on long foot-ſtalks. The fruit is round, ſmooth, of a beautiful red, and the ſize of a common cherry.

5. Olive Pepper came from Barbadoes. This is like the firſt in ſtalk and leaves, but the fruit is oval, and about the ſize of a French Olive. Theſe are all annual with us, whatever they may be in their native countries; their ſtalks decaying ſoon after the fruit is ripe.

2. [The Capſicum commonly called Bird Pepper differs but little from *C. fruteſcens*. The ſtem is more tender, more ſhrubby, and not roughiſh. The berries are very ſmall, of an ovate form, and of the ſize of currants. The branches are divaricated, not ſpreading out at a right angle with the ſtem. The calyxes have ſpreading ſubulate teeth, not obſcure as in that [d].

According to Loureiro, the ſtem is three feet high, ſmooth and upright; with longiſh, ſcattered, ſlender branches. Leaves lanceolate, quite entire, ſmooth, ſcattered, ſmall, petioled. Peduncles one or two-flowered. Berry roundiſh very red, the ſize of a common cherry. The lower leaves are oppoſite, and the upper alternate.

Cluſius informs us, that it was cultivated abundantly in Moravia, in 1585 [e]; and it was cultivated here in 1731, by Mr. Miller [f].

The Bird Pepper is gathered when ripe, dried in the ſun, pounded and mixed with ſalt. It is then kept ſtopped in bottles, and is commonly known by the name of *Cayan-butter*.

A mixture of ſliced cucumbers, eſchalots or onions cut very ſmall, a little lime juice and Madeira wine, with a few pods of this or bonnet pepper well maſhed, and mixed with the liquor, ſeldom fails to provoke the moſt languid appetite in the Weſt Indies. It is called there *Man-dram*. The pods gathered freſh from the buſh are alſo liberally uſed in the Weſt Indies, to aſſiſt digeſtion, and correct flatulencies.

Both this and the common Guinea Pepper are given internally to horſes and mules, to cure the dry gripes, occaſioned by rank and ſour graſs. They are likewiſe applied externally in cataplaſms [g].

Miller has four ſorts with perennial ſhrubby ſtalks.] 1. *Capſicum pyramidale*, n. 7.—2. *C. conoides*, commonly called *Hen Pepper*, n. 8.—3. *C. fruteſcens*, commonly called *Barberry Pepper*, n. 9.—4. *C. minimum*, commonly called *Bird Pepper*. They riſe four or five feet high, and are not ſo hardy as the annual ſort.

1. I received the ſeeds of C. pyramidale from Egypt. The leaves are much narrower than thoſe of any other; the pods always grow erect, and are produced in great plenty, ſo that the plants make a good appearance for three months in the winter, and they may be preſerved two or three years; but the young plants being moſt fruitful, few perſons preſerve the old ones longer than till they have perfected their fruit, when they begin to loſe their beauty.

2. *Capſicum conoides* came from Antigua with the title of Hen Pepper. It riſes with a ſhrubby ſtalk three or four feet high, ſending out many branches toward the top. The fruit is about an inch long, in form of an obtuſe cone, of a bright red, and grows erect. This ripens its fruit in winter, when it makes a pretty appearance.

3. *Capſicum fruteſcens* grows about the ſame height as the foregoing, but differs in the ſhape and ſize of the fruit, which is about the bigneſs of a Barberry, and nearly of the ſame form.

4. *Capſicum minimum*, commonly known by the title of Bird Pepper in America. This riſes with a ſhrubby ſtalk four or five feet high. The leaves are broad, and rounder at the ends than thoſe of the others, and of a lucid green. The fruit grows at the diviſions of the branches, and ſtands erect: it is ſmall, oval, of a bright red, and much more ſharp and biting than the others. From this ſort not only Cayan butter, but Pepper-pot is made. The latter from the ripe pods, dried in the ſun, and then in an oven after bread is baked, in an earthen or ſtone pot, with flour between the ſtrata of pods. When quite dry they are cleaned from the flour, and beaten or ground to fine powder. To every ounce of this a pound of Wheat flour is added, and it is made into ſmall cakes with leaven: theſe are baked, cut into ſmall pieces, baked again that they may be as dry and hard as biſcuit, and then are beaten into powder and ſifted. This powder is uſed for all the ſame purpoſes with common Pepper, and is uſually called Cayan Pepper.

[I have kept theſe four ſhrubby ſorts of Capſicum, from Miller, together, under the Weſt-Indian ſort, to which they ſeem to belong, rather than to the Eaſt Indian ſhrubby ſort, or *Capſicum fruteſcens* of Linneus: but whether that be ſpecifically different from this may be doubted.

3. Trunk perennial, woody, with an aſh-coloured bark. The whole plant is ſmooth. Leaves ovate, acuminate, quite entire, alternate, on long petioles. Peduncles one-flowered, ſolitary or twin, ſhort. Calyx ſmall, ſharp, green. Border of the corolla deeply cut into lanceolate ſegments, whitiſh with a tinge of yellow. Anthers dark violet, erect. Fruit ſhining, ovate, obtuſe, obſcurely angular, yellow. Seeds pale. It is cultivated in Martinico, and uſed there for culinary purpoſes [h].

4. This bears a great reſemblance to the annual Capſicum, and indeed ſeems to be the connecting link between the herbaceous and ſhrubby ſorts. The ſtem is perennial, a ſpan in height, and ſomewhat branching. The fruit, in proportion to the plant is very large, being almoſt as big as an apple, but differing in ſhape; it is ſolitary and erect [i]; from an inch and half to two inches long, ſwelling and wrinkled, flatted and angular at top. [Cultivated in 1759, by Mr. Miller. *C. baccatum* (n. 2.) was cultivated by him in 1731 [k].]

Bell Pepper is the ſort moſt proper for pickling, the ſkin being fleſhy and tender, whereas in the others it is thin and tough. The fruit ſhould be gathered before it arrives at the full ſize, whilſt the rind is tender: it ſhould be ſlit down on one ſide, to get out the ſeeds; after which it ſhould be ſoaked two or three days in ſalt and water. When drained from this, it muſt be covered with boiling vinegar, and cloſely ſtopped down for two months, and then boiled in vinegar to make it green. It wants no addition of ſpice.

If the ripe fruit of this or any of the Capſicums be thrown into the fire, it will raiſe ſtrong and noiſome vapours, which occaſion vehement ſneezing and coughing, and often vomiting. The powder taken up the noſe will occaſion violent and dangerous fits of ſneezing.

[Thunberg relates, that a pretty little dwarf variety of Bell Pepper is much in favour with the Japoneſe, who are very fond of any thing ſtrange or minute.

5. Stem three feet high and rugged; branches diffuſed, frequently ſcandent. Leaves lanceolate, quite entire, waved, ſmall, ſmooth, petioled, alternate or ſcattered. Flowers axillary, ſmall, white, five or ſix-cleft. Fruit at firſt green, but when ripe golden or faffron-coloured, crooked and ſhaped like a horn, an inch long, uſually ſolitary [l].

[d] Linn. mant. [e] Exot. [f] Hort. kew. [g] Long's Jamaica, 3. 732. [h] Jacquin. [i] Linn. mant. [k] Hort. kew. [l] Loureiro.

This was cultivated in 1656, by Mr. John Tradescant, jun.*]

Most of the sorts of Capsicum are natives of both the Indies, but they have been chiefly brought to Europe from America, where they abound in all the Caribbee islands, and are greatly used in sauces, especially by the negroes, whence the fruit is called Negro and Guinea Pepper.

[The well-known preparation called Cayenne Pepper, made from the pods of the smaller sorts of Capsicum, when used in moderation is considered as by no means unwholesome, especially to those of cold, lencophlegmatic habits.

In such temperaments, as well as in paralytic cases, it is used medicinally in small quantities as one of the highest stimulants. It has also been exhibited in combination with aloetic medicines and the deobstruent gums in uterine disorders.

A small quantity of the powder of Capsicum has sometimes given almost immediate relief in the tooth-ach, when arising from a caries: it is to be applied to the part affected, by introducing it into the cavity of the carious tooth.]

PROPAGATION AND CULTURE.

The annual Capsicums are propagated by seeds, which must be sown upon a hot-bed in the spring; and when the plants have six leaves, they should be transplanted on another hot-bed, at four or five inches distance, shading them in the day time from the sun, until they have taken root, after which, they must have a large share of air admitted to them in warm weather, to prevent their drawing up weak. Toward the end of may, the plants must be hardened by degrees to bear the open air; and in june they should be carefully taken up, preserving as much earth about their roots as possible, and planted into borders of rich earth, observing to water them well, as also to shade them until they have taken root; after which time, they will require no other management, but to keep them clean from weeds, and in very dry seasons to refresh them three or four times a week with water. They will flower the end of june and in july, and their fruit will ripen in autumn. These directions are for the culture of the common sorts of Capsicum, which are generally planted by way of ornament. But the plants of the fourth sort, which are propagated for pickling, should be planted in a rich spot of ground, in a warm situation, about a foot and a half asunder, and shaded till they have taken root, and afterward duly watered in dry weather; which will greatly promote their growth, and cause them to be more fruitful, as also enlarge the size of the fruit. By this management, there may be at least two crops of fruit for pickling obtained the same year, provided the season proves not too cold; but there should be one plant, whose pods are large and forward, chosen to save seeds; and the first fruits on this should be suffered to remain, that they may have time to perfect their seeds before the frost comes in autumn, for the early frost generally destroys these plants. When the fruit is fully ripe, it should be cut off, and hung up in a dry room till the spring, when the seeds are wanted.

The varieties 3, 4, 5, being tender, the plants should be put into pots, and placed in an old hot-bed under a deep frame, where they may have room to grow: or if they are planted in the full ground, the plants should be each covered with a bell-glass to screen them from cold. These glasses may be set off every day in warm weather, and placed over them in the evening again; and at such times as the weather is not favourable, the glasses should be raised on the contrary side to the wind, to admit the fresh air. With this care, the fruit of these sorts will ripen in England, which without it, rarely come to maturity, but in very warm seasons.

The beauty of these plants is in their ripe fruit, which being of different forms and colours, intermixed with the green leaves, and white flowers at the same time, make a pretty appearance in the latter part of the summer, when they are properly disposed in the borders of the flower-garden; or if they are planted in pots, for the decoration of courts, &c. being intermixed with other annual plants, which are in beauty at the same season, they will make an agreeable variety; especially, if as many of the different shaped fruits, of both the red and yellow colours as can be procured, are propagated.

The sorts with perennial shrubby stalks, are not so hardy as the other, therefore when the plants have been brought forward in the hot-bed, as was directed for the common sorts, they should be each planted in a pot filled with rich earth, and plunged into a very moderate hot-bed, under a deep frame, where they may have room to advance; and in warm weather, they should have a large share of air admitted to them, but must be covered with glasses every night, or in cold weather, and frequently watered. With this management they will produce plenty of fruit in autumn, which ripen in winter; but they must be removed into the stove, on the first approach of frost, and placed where they may have a temperate warmth, in which they will thrive better than in a greater heat; and the fruit will continue in beauty most part of winter, making a pretty appearance in the stove during that season.

In Spain and Portugal this fruit is much cultivated for the same purpose as in America, but in England chiefly for ornament.

[The annual Capsicum was cultivated by Gerarde in 1597. He says, "the cod doth not come to that "bright red colour which naturally it is possessed "with, which hath happened by reason of these "unkindly years that are past: but we expect better "when God shall send us a hot and temperate "year."

He recommends it to be "sowne in a bed of "hot horse-dung as Musk-Melons are, to be re-"moved into a pot, and toward autumn to be "carried into some house." And adds, "that it "is very well known in the shops at Billingsgate "by the name of Ginnie Pepper, where it is usually "to be bought."]

[CAPURA.

*Lin. gen.* *Reich.* 477. *Schreb.* 599. *Juss.* 437.

Class. 6. 1. Hexandria Monogynia.

GENERIC CHARACTER.

CAL. none.

COR. monopetalous, tubular. *Tube* cylindric; *border* six-parted; *divisions* rounded; the exterior alternate ones narrower.

STAM. *Filaments* hardly any. *Authers* six, oblong, within the tube; the alternate ones superior.

PIST. *Germ* superior, triangularly-roundish, truncate. *Style* cylindrical, very short. *Stigma* nearly globose.

PER. *Berry?*

SEED.

ESSENTIAL CHARACTER.

*Cal.* none. *Cor.* six-cleft. *Stam.* within the tube. *Germ* superior. *Stigma* globular. *Per.* Berry.

SPECIES.

1. Capura purpurata.

*Lin. syst.* 343. *Reich.* 2. 107. *mant.* 255.

DESCRIPTION, &c.

A tree with brachiate purplish branches. Leaves opposite, subpetioled, ovate, like those of *Lonicera Xylosteum*, quite entire, sharpish, annual. Bunches of flowers axillary, shorter than the leaves, purple. Native of the East-Indies.*]

CAPUT GALLINACEUM. See *Hedysarum.*

[CAPUT MEDUSÆ. See *Elymus* and *Euphorbia.*

CARA. See *Dioscorea.*

CARACA. See *Dolichos.*

CARACALLA. See *Phaseolus.*]

CARAGANA. See *Robinia.*

[CARAGUATA. See *Bromelia.*

CARAMBOLA. See *Averrhoa.*

CARAMBU. See *Jussiena.*

CARANASI. See *Capraria.*

* Hort. kew.

* Linn. mant.

5. Lower-leaves ovate; upper ones three-lobed haſtate, or ſubternate with the ſide-lobes ſmaller. Stature of *C. bellidifolia*, to which Haller unites it[1].

Root biennial. The root-leaves reſemble thoſe of *C. bellidifolia*; the ſtem-leaves are pinnate, but the lower ones are ſometimes pinnatifid. Leaflets of the calyx linear, green with a white edge: corolla white, twice as large as the calyx; petals almoſt ſquare, ſlightly emarginate. The ſtem-leaves being conſtantly pinnate, it ought not to be confounded with *C. bellidifolia*[2]. Native of the South of France, the Swiſs Alps and the Pyrenees, Germany, Auſtria, Piedmont; on the higheſt rocks; flowering in july.

6. Root creeping. Stem branched cicatrized with the fallen petioles. Radical leaves often continuing to another year, ternate, on long reddiſh ſemicylindric petioles; leaflets rounded above the middle, with repand or ſubcrenated edges: the notches ending *in* a point. One leaf on the ſtem. Calyx erect, not gibbous. Petals expanding, ovate, white, waved and wrinkled about the edge. Stigma truncated, flat. Silique an inch long, flat. Seeds in one cell (one to three) ovate, flat[3].

According to Haller, the radical leaves ſmooth, firm, ſhining, with two pairs of pinnas, and an odd one larger. Stem a long ſpan in height, unbranched, purple, with a few leaves which are narrower. Corolla pale purple. Six glands, four between the lower ſtamens and the higher ones, two between the latter and the calyx.

Native of Lapland and Weſtrogothia, Switzerland, Carniola, and Auſtria. Cultivated 1629, by Parkinſon[4].

7. Leaflets ſtiff, large, roundiſh, with ſinuated edges, the terminating one very large. Stems a ſpan or more in height, round, ſomewhat hairy, and ſtriated toward the top. Flowers in ſpikes, purple. Siliques long. Native of Africa. Perennial; flowering in may[5].

8. Stem herbaceous, eight inches high, with many aſcending branches. Leaflets ſeven, lanceolate, ſmooth. Flowers white, in ſimple, terminating ſpikes. Leaflets of the calyx curved, gaping a little. Corolla bell-ſhaped, ſpreading. Silique longiſh, cylindric, with the valves rolled back; ſeeds ovate[6]. Native of Italy, Siberia, and China.

9. Root annual. Stems from ſix to twelve or eighteen inches high, angular, hollow, ſtiff, erect, ſomewhat flexuoſe, ſimple, or but little branched. Radical leaves have five pairs or more of ovate pinnas obtuſely lobed. Stem-leaves very numerous, growing without order, ſhorteſt toward the bottom of the ſtem, pinnate; pinnas nine pairs or more, oval-lanceolate or lanceolate, deeply and acutely lobed or indented, eſpecially on the lower edge; ſmalleſt toward the ſtem, and gradually larger; odd leaflet uſually three-lobed. Flowers in erect ſpikes. Siliques numerous, almoſt parallel to the ſtem, long, ſtiff, ſwelling a little.] It has the title of *Impatiens* from the elaſticity of theſe ſiliques, which, if touched when they are ripe, ſpring open, and caſt out their ſeeds with violence to a conſiderable diſtance.

Linnæus ſays, that the flowers in Sweden have no petals, in both wild and cultivated plants: that however in 1764 he found one flower with white petals. Leers affirms that they never have petals with them. Pollich and Woodward remarked none in what they examined. Hudſon ſays that the flowers ſometimes have no petals; but that at other times they have oblong ones, ſcarcely longer than the calyx, but extremely fugacious: and his remark is certainly juſt. Scopoli affirms that his ſpecimens from Gorizio had no petals, but that the plants which he collected about Idria had. Others, as Ray, Crantz, Allioni, Reichard, Krocker, Villars, &c. ſay that the flowers have petals, though they are very ſmall, and deciduous.

[1] Linn. ſpec. [2] Allioni. [3] Scopoli. [4] Hort. kew. [5] Hermm. [6] Loureiro. [7] Haller, Lightfoot, Woodward Mſſ.

On the Swiſs mountains, Sweden, Denmark, Germany, the South of France, Auſtria, Carniola, Piedmont, the Pyrenees. With us in Derbyſhire, Yorkſhire, Weſtmoreland, Worceſterſhire, Somerſetſhire. Flowering in may and june.

Johnſon, in Gerard, ſays it was firſt introduced into our gardens by Jolin Tradeſcant; and that he found it about Bath, and in other places.

10. Very much reſembling *C. impatiens*, but differs as follows: ſtem ſhorter, with angles not ſo ſharp; leaves without ſtipules; leaflets lanceolate, obtuſe, ſcarcely toothed; the loweſt not palmate, but ovate and ſmooth; ſtamens ſhorter than the corolla; ſiliques only half the ſize, erect on horizontal pedicels[1].

It is an annual plant. The petals are never wanting, as they are ſometimes in the *C. impatiens*. The ſiliques are ſhorter and thicker[2]. Native of many parts of Europe.

Haller looks upon this as a variety of *C. hirſuta*, and in this he is followed by Hudſon and Curtis. See n. 12.

11. Root annual. Height leſs than a ſpan. Stems ſlender, jointed, branched. Leaflets *nine*, ſmall, ovate, ſemipalmate, obtuſe, reſembling thoſe of *Thalictrum aquilegifolium*, divided about the edge like thoſe of *Fumaria*. Flowers few at the tops of the branches. Calyx erect. Corolla white. Native of Sicily, Corſica, and the Greek iſlands[3].

12. Root annual, fibrous. Stem a ſpan high or more (in wet ditches eighteen inches) ſolid, upright, flexuoſe, grooved or angular, purple near the baſe and commonly very hairy, above nearly ſmooth, branched, ſometimes very much ſo. Radical leaves numerous, forming a circle, pinnate; leaflets petioled, round-angular, generally five-lobed, hirſute, roughiſh with little prominent points; the lobes unequal, blunt or pointed: ſtem-leaves narrower, and more deeply indented, with fewer lobes. Calyx has a few white hairs: corolla almoſt twice the length of the calyx, ſmall, white; petals entire, obtuſe. Silique about an inch in length, upright: ſeeds (twelve) flattened, ſmooth, yellowiſh-brown. Early in the ſpring, when the weather is cold, it has only four ſtamens, but as the ſummer advances, it has conſtantly ſix. In a wet ſituation and luxuriant ſoil, it loſes in a great degree its hairineſs; in expoſed places it ſeldom reaches more than ſix or eight inches, and is generally much more hairy; when it grows ſingly, it is much more branched. The leaflets vary much in ſhape[4].

The ſpecific character given by Mr. Hudſon, who unites it with *C. parviflora*, is this: leaves pinnate; radical leaflets roundiſh-cordate; thoſe on the ſtem ovate, toothed, petioled. He ſays that in the *parviflora*, the leaflets of the upper leaves are naked. Dr. Stokes thinks that to be clearly diſtinct from *C. hirſuta*, and ſays that it comes into flower as the *hirſuta* is going out. Haller however has no doubt of its being a variety; and Mr. Curtis aſſures us that repeated obſervation and culture have convinced him that theſe are both the ſame ſpecies.

Native of moſt parts of Europe, in wet ſhady places. I found it quite ſmooth on mont Saleve in Savoy, near Geneva, early in april. Hairy it is common in Warwickſhire; not ſo near London, but near Chelſea water-works, Highgate, Hampſtead, &c. It flowers in april and may.

The young leaves are a good ſalad in the ſpring[5].

13. Root perennial. Stem nine inches or a foot high, upright, at top a little branched, round, ſcarce perceptibly angular, ſmooth, ſtiffiſh, with a purpliſh tinge at bottom. Radical leaves on petioles often an inch to two inches in length, having three or four pairs of leaflets, frequently imperfect, after the ſtem is advanced; the pinnas roundiſh, running out into three unequal angles or teeth, the outermoſt largeſt, and having for the moſt part five angles. On the

[1] Linn. ſpec. [2] Villars. [3] Boccone and Linn. mant. [4] Curtis. [5] Lightfoot.

lower ſtem-leaves there are frequently ſix or ſeven pairs of ovate leaflets, placed alternately; higher up they become oblong, and finally linear: they are commonly ciliate round the edge; and the ſtem-leaflets often terminate in a point. The radical leaflets are on ſhort petiolules; the lower ſtem-leaflets are ſubſeſſile; and the upper ones are quite ſeſſile. A ſingle corymb of about ten flowers terminates the ſtem. Calyx yellowiſh green. Corolla large, pale purple: lamina ovate, emarginate, deeply veined: claws yellowiſh. Nectary of four glands, two ſurrounding the baſe of the ſhort filaments, and two on the outſide of the baſe of the long filaments. Shorter filaments hid, the anthers juſt emerging; the four longer ones ſtand conſiderably above the corolla. Silique an inch long. Seeds ſixteen in one cell.

Moſt authors ſpeak of the corolla as being purple, it is ſingular therefore that our poets ſhould allude to the ſilvery whiteneſs of it, when it is generally more or leſs tinged with purple till it has been bleached by the ſun. It is very general in moiſt meadows, and by the ſides of ditches and ſtreams, flowering in april and may. From its early appearance, the name of *Cuckow-flower* has been given to this, among many other ſpring plants.]

The young leaves of this, and ſome of the other ſorts, are gathered in the ſpring, and put into ſalads, inſtead of Creſs, of which they have the flavour, and the antiſcorbutic quality. [Kine ſeldom touch it; but ſheep will eat it, at leaſt when they are firſt turned into a meadow or marſh.

The virtue of the flowers in hyſteric and epileptic caſes, was firſt mentioned by Ray and Dale, from Dr. Tancred Robinſon; and ſince by Dr. Baker, (*Med. tranſ.* 1.) The doſe is from twenty to ninety grains twice a day, of the powder of the dried flowers. Do they not act like *Erysimum cheiranthoides* in the epilepſies of children, and cure the diſeaſe by deſtroying the worms in the ſtomach and inteſtines? I have accounts of their ſucceſs in young epileptics, from good authority; but have never been fortunate enough to ſee them of much uſe in hyſterical caſes [a].

From the diſuſe into which this medicine has fallen, it ſhould ſeem that it had not anſwered the expectations of practitioners [b].

Caſes however have ſometimes occurred in the practice of very eminent phyſicians, in which epilepſies, and obſtinate headachs, even in old people, after yielding to no other remedies, have been cured by this medicine given in the quantity before mentioned about twice a day or oftener. It commonly operates by inducing a degree of hæmorrhage per anum, and ſometimes from the other emunctories.

It ſeems particularly ſerviceable in thoſe kinds of epilepſies which are brought on by the receſs or want of the menſes.

It has alſo been conſidered as uſeful in ſcorbutic caſes, like many other plants of the ſame natural order.

14. Mr. Curtis has admirably well diſtinguiſhed this, from the foregoing common ſort. The ſtem-leaflets are large, broad, and very angular, reſembling thoſe of Water-Creſs. It is in every reſpect a larger plant than that, its bloſſoms excepted, which are nearly of the ſame ſize. Theſe are always perfectly white: the anthers, which in the *pratenſis* are yellow, are in this of a deep purple: the tips of them are alſo more curled up: the ſtyle, which in the *pratenſis* is upright, in the *amara* has an unuſual obliquity. Towards the bottom of the ſtalk, this is more diſpoſed to throw out runners: it is alſo more local, and rather affects the edges of ſtreams, than the open meadow.

Native of Sweden, Switzerland, Germany, France, Piedmont. With us, near London, at Cheſſea, Batterſea, Lewiſham, Uxbridge, Hareſield; Dorking in Surry; Braintree in Eſſex; Middleton in Warwickſhire; Aſton near Birmingham; above Worceſter; and Great Comberton in Worceſterſhire; near Norwich; Bungay, Suffolk; and in Scotland. Near rivulets, on the banks of rivers, in boggy places, and moiſt meadows: flowering in april and may. Perennial.

The young leaves are acrid and bitteriſh, but do not taſte amiſs in ſalads [c]. They are pungent, bitter and aromatic, in ſuch a degree as to promiſe very conſiderable medical uſes [d].

15. Radical leaves in a circle, pinnate; leaflets numerous, almoſt imbricate, ſublanceolate, with one ſhort toothlet from the hinder ſide near the baſe. Stem with few leaves, generally linear and entire. Habit of Shepherd's purſe. Native of Virginia [e].

16. Stem ſtriated, branching, procumbent, the extreme branches bearing flowers on a ſhort umbel. Leaves tender juicy, not hirſute, pinnate; the radical ones have often two pinnas. Stem-leaves have two pairs of pinnas; pinnules petiolate, the ſide ones two or three-lobed, the lower one more remote. Leaflets of the calyx linear-elliptic concave. Petals pale yellow, cordate, emarginate, claws greeniſh, double the length of the calyx and more. Siliques a little ſtalked, acuminate. Seeds ſlouſly, flat, lemon-coloured, grooved on one ſide. Native of mount Cenis, St. Bernard, the Grand Chartreuſe, &c. Biennial [f].

It ſeems doubtful whether Villars's plant be the ſame with Allioni's, the petals being white and not emarginate. His ſtem however agrees with it; and ſo does Arnbroiſni's *pluteus*. P. 374. Villars adds, that it produces ſeveral weak ſtems, which are only a few inches in height, and lie on the ground; the leaves are ſhghtly villoſe, tender, rounded but frequently irregular; the ſiliques ſlender and few in number.

17. Stem ſix inches high, erect, branching, moderately hirſute. Radical leaves on long petioles, obtuſe, repand, with one pinnule beneath, a line in length. Leaves of the runners ſmall, petioled, ſharpiſh, with acuminate angles behind. Stem-leaves ſimple, on ſhort petioles, ſharpiſh. Branches with few leaves and flowers. Calyx greeniſh. Petals white with greeniſh claws. A gland ſupporting the ſhorter ſtamens, and another between the calyx and the taller ſtamens. Anthers yellow. The calyx inclining to expand makes it approach to *Siſymbrium*. It is ſufficiently diſtinct from *C. amara* [g]. Native of Carniola, Auſtria, and the borders of Bohemia.

18. Root fibrous, fibres very cloſe, capillary. Scapes naked, a finger's length. Root-leaves very many, petioled, ternate, erect, looſe; lower ſtem-leaves often ſolitary, ſometimes oppoſite in pairs, ovate, ſubpetioled, very ſmall; the terminating one round, curled, ſmooth, dotted. Native of Japan [h].

Forſter mentions a ſpecies, which he calls *Cardamine ſarmentoſa*, to be found in the iſland of Teautea, in the South Seas [i].]

### PROPAGATION AND CULTURE.

Few of theſe plants are admitted into gardens. The double varieties of the common ſort (n. 13.) with white and purple flowers, deſerve a place in ſhady moiſt borders of the flower-garden, where they will thrive, and make a pretty appearance during their continuance in flower. They are propagated by parting their roots in autumn; at which time they ſhould be tranſplanted annually.

The others are moſtly low plants, growing in wet or alpine ſituations. The perennial ſorts may be propagated by parting their roots in the autumn; they require a ſtrong ſoil and ſhady ſituation. [Some of them alſo (as n. 13. 14. 17.) produce offsets or runners, by which they may be increaſed.] There is a variety of the Bitter Creſs (n. 14.) with double flowers, which may be propagated by parting the roots.

All the ſorts will grow from ſeeds ſown in the au-

[a] Withering. [b] Curtis. [c] Lightfoot. [d] Withering. [e] Linn. ſpec. [f] Allioni. [g] Scopoli. [h] Thunberg. [i] Fl. auſtral. 2. 329.

tumn

tumn on a ſhady border, where they require no care but to be kept clean from weeds, and will flower early in the following ſeaſon. Being very prolific in ſeeds, and their pods being provided with a particular mode of diſperſing them, by means of the twiſting of the valves in opening; when once introduced theſe plants will propagate themſelves in plenty; but they will thrive beſt in the ſhade.

CARDAMINE. See *Lepidium*, *Ricotia*.

CARDAMOMUM. See *Amomum*.

CARDIACA. See *Galeopſis*, *Leonurus*, *Phlomis*, *Stachys*.

CARDINAL FLOWER. See *Lobelia*.

CARDIOSPERMUM. (*From καρδια Heart, and σπερμα Seed; the ſeed being marked with a heart-ſhaped ſcar or ſpot.*)

Engl. *Heart Pea.* Amer. *Wild Parſley.*
Fr. *Pois de Merveille.*

*Lin. gen.* 498. *Reich.* 540. *Schreb.* 680. *Gærtn. t.* 79. *Juſſ.* 246. Corindum. *Tourn.* 246. Veſicaria. *Riv. tetr.* 144.

Claſſ. 8. 3. Octandria Trigynia.

Nat. order of *Tribilatæ*. *Sapindi* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-leaved; *leaflets* obtuſe, concave, the alternate interior ones the ſize of the corolla, permanent.

COR. *Petals* four, obtuſe, alternate with the larger leaflets of the calyx.

*Nectary* four-petalled, coloured, incloſing the germ; *leaflets* obtuſe, growing upon the petals, two upon the erect lip, callous at the tip, hooked at the ſide; the reſt upon the cloſed lip; with equal ſides.

STAM. *Filaments* eight, ſubulate, equal with the nectary. *Anthers* ſmall.

PIST. *Germ* three-ſided. *Styles* three, ſhort. *Stigmas* ſimple.

PER. *Capſule* roundiſh, trilobate, inflated, trilocular, gaping at the tip.

SEEDS ſolitary, globular, marked at the baſe with a cordate ſcar.

ESSENTIAL CHARACTER.

*Cal.* four-leaved. *Pet.* four. *Nect.* four-leaved, unequal. *Capſ.* three, connate, inflated.

SPECIES.

1. Cardioſpermum Halicacabum. *Smooth-leaved Heart Pea* or *Heart-ſeed.*
*Lin. ſpec.* 525. *Reich.* 2. 220. *hort. cliff.* 151. *upſ.* 97. *fl. zeyl. n.* 142. *Gærtn. fruct.* 1. 381. *Lour. cochinch.* 239. *Brown. jam.* 213.
Halicacabum. *Rumph. amb.* 6. 60. *t.* 24. *f.* 2. *Ger.* 271. *f.* 2.
H. peregrinus. *Dod. pempt.* 455.
Piſum veſicarium, fr. nigro, alba macula notato. *Bauh. pin.* 343. *Sloan. jam.* 1. 238.
P. cordatum. *Beſl. eyſt. aſt.* 13. *t.* 11. *f.* 1.
β. Corindum ampliore fol., fructu maximo. *Tourn. inſt.* 431.
γ. C. fr. & fol. minori. *Tourn. inſt.* 431. [This ſynonym Miller gives to his firſt ſpecies, which is the ſecond in Linnæus.]
*Leaves ſmooth and even.*

2. Cardioſpermum Corindum. *Woolly-leaved Heart Pea*, or *Parſley-leaved Heart-ſeed.*
*Lin. ſpec.* 526. *Reich.* 2. 220. *Lour. cochinch.* 239.
*Leaves tomentoſe underneath.*

[3. Cardioſpermum grandiflorum. *Great-flowered Heart-ſeed.*
*Swartz prodr.* 64.
*Leaves pubeſcent, capſules acuminate, very large, ſmooth and even.*

DESCRIPTIONS, *&c.*

1. Stem herbaceous, twining, ſtriated, unarmed, ſlender, long, branched. Leaves broad-lanceolate, ſinuate-gaſhed, ſmooth, biternate. Flowers axillary, ſolitary, ſmall, white, on long peduncles[a]. Calyx five-leaved. Capſules three, inflated, membranaceous, netted-veined, winged with a very narrow membranaceous dorſal rim, coadunate, and ſo connected at the axis as to ſeem a ſingle three-lobed capſule; they are each one-celled and valveleſs. The receptacle is a white fungous tubercle, faſtened to the middle of the inner angle of the capſules, and the ſeed is faſtened to it by a broad umbilical ſcar. Seeds ſolitary, globular, black, marked with a white heart-ſhaped umbilical ſcar: cover ſingle, hard; no albumen; embryo globular-beaked, white: cotyledons fleſhy, thick, unequal, the larger having a deep ſinus for the reception of the ſmaller; plume two-horned, very ſmall; radicle conical, compreſſed, beaked, centripetal[b].]

Miller ſays, that this differs from the ſecond in having taller ſtalks, and the leaves firſt divided into five, and again into three parts. The footſtalks are ſhorter; the ſeeds, and the bladders in which they are contained, are much larger, and the whole plant is ſmoother.

Native both of the Eaſt and Weſt Indies, and the Society iſles in the South Seas.

[Gærtner obſerves, that the ſeeds from the former are little more than half the ſize of thoſe from the latter country, and that the cotyledons are flatted into a thick fleſhy lamina, and are rolled up ſpirally. Loureiro remarks, that Rumphius's figure does not agree very well with his plant, either in the ſtem or the many-flowered peduncles.

This ſpecies was cultivated by Gerarde, in 1594. It flowers here in July[c].]

2. The ſecond ſort riſes with a ſlender, channelled, climbing ſtalk, to the height of four or five feet, ſending out many ſide branches, with leaves, upon very long foot-ſtalks, coming out oppoſite at the lower part of the ſtalk; but upward the leaves come out on one ſide, and the peduncle at the oppoſite; the petioles are divided into three, each of which ſuſtains ſmall leaves, which are again divided into three parts, that are ſharply cut on their edges, and end in ſharp points. The peduncles are long, naked, and toward the top, divided into three ſhort ones, each ſuſtaining a ſingle flower. Immediately under theſe diviſions, come out tendrils or claſpers, like thoſe of the Vine, but ſmaller; theſe faſten themſelves to whatever plants grow near them, and are thereby ſupported. The flowers are ſmall, white, and compoſed of four ſmall concave petals, two of which ſtanding oppoſite, are larger than the other; when theſe fall away, the germ becomes a large, inflated bladder, having three lobes, in each of which is contained one, two, and ſometimes three ſeeds, which are round, hard, and the ſize of ſmall Peas, each being marked with a black ſpot in ſhape of a heart.

[This reſembles the former ſpecies, but the capſules and under ſurface of the leaves are tomentoſe. The peduncles ſupporting ten or eleven flowers, among the tendrils, are ſtiff and remain after the fructification is paſt. The capſules are narrower[d].

Native of Braſil, and according to Loureiro, of the ſuburbs of Canton in China. Cultivated in 1759, by Mr. Miller. It flowers in July and auguſt[e].

3. Native of Jamaica.]

PROPAGATION AND CULTURE.

In the Indies theſe plants climb upon whatever ſhrubs are near them, and riſe to the height of eight or ten feet; but in England they are ſeldom much above half ſo high; they ſend out many ſide branches, which ſpread to a conſiderable diſtance; and, if permitted, they will faſten themſelves to the neighbouring plants by their ſmall tendrils.

They are annual, and periſh ſoon after they have perfected their ſeeds; and being natives of hot countries, they will not thrive in England but in a ſtove. They are propagated by ſeeds, which ſhould be ſown upon a hot-bed in the ſpring; and when the plants are two inches high, they ſhould be each tranſplanted into a pot filled with light ſandy earth, not

[a] Loureiro.

[b] Gærtner. [c] Hort. kew. [d] Linn. [e] Hort. kew.

too rich, then plunged into a very moderate hot-bed, where they muſt be carefully ſhaded until they have taken freſh root; after which they muſt have a large ſhare of air, to prevent their being drawn up tall and weak; and when their roots have filled the pots, they ſhould be carefully ſhaken out, preſerving all the earth to their roots, and put into pots which are a little larger, filling them up with the ſame light earth, and placing them either under a deep frame, or behind the plants in the ſtove, where they may be ſcreened from the ſun till they are well ſettled in the pots; after which they may be removed into a glaſs-caſe, where they may have room to grow and be ſcreened from the cold of the nights, but in warm weather they will require much air. With this management they will flower in july, and their ſeeds will ripen in autumn.

[CARDISPERMUM. See *Calendula*.

CARDOON. See *Cynara*.

CARDUNCELLUS. See *Carthamus*.

CARDUNCULUS. See *Cynara*.

CARDUO-CIRSIUM. See *Cnicus* and *Serratula*.]

CARDUUS. (*A carere; quia aptus carendæ lanæ*; *being fit to teaſe wool.*)

Engl. *Thiſtle*. Fr. *Chardon*.

*Lin. gen.* 925. *Reich.* 1004. *Schreb.* 1254. *Gærtn. t.* 162. *Juſſ.* 173. *Vaill. A. G.* 1718. Polyacantha & Silybum. *Vaill. A. G.* 1718. *Gærtn. t.* 162. Cirſium. *Tourn.* 255. *Vaill. A. G.* 1718. *Gærtn. t.* 163. Eriocephalus. *Vaill. A. G.* 1718.

Claſſ. 19. 1. Syngeneſia Polygamia æqualis.

Nat. order of *Compoſitæ Capitatæ*. *Cinarocephalæ* Juſſ.

GENERIC CHARACTER.

CAL. *Common* ventricoſe, imbricate, ſcales very numerous, lanceolate, acuminate, ſpiny.

COR. *Compound*, tubular, uniform. *Corollules* hermaphrodite, ſubequal, reflected. The *proper* one monopetalous, infundibuliform; *tube* very ſlender; *border* erect, ovate at the baſe, quinquefid; *diviſions* linear, equal, one more deeply ſeparated than the reſt.

STAM. *Filaments* five, capillary, very ſhort. *Anthers* cylindrical, tubular, length of the corollule, five-toothed at the mouth.

PIST. *Germ* ovate. *Style* filiform, longer than the ſtamens. *Stigma* ſimple, ſubulate, naked, emarginate.

PER. none. *Calyx* converging a little.

SEEDS ſolitary, obovate, four-cornered, the two oppoſite corners obliterated; *down* ſeſſile, very long.

REC. hairy, flat.

ESSENTIAL CHARACTER.

*Calyx* ovate, imbricate with ſpiny ſcales. *Receptacle* hairy.

SPECIES.

[1. Carduus leucographus.

*Lin. ſpec.* 1149. *Reich.* 3. 674. *Jacqu. hort.* 3. *t.* 23. *Willich. illuſt. n.* 69. *Allion. pedem. n.* 529. *t.* 73. *Gærtn. fruct.* 2. 377.

*Leaves decurrent toothed ſpiny; peduncles naked very long, one-flowered; calyxes ſpiny inclined.*

2. Carduus lanceolatus. *Spear Thiſtle.*

*Lin. ſpec.* 1149. *Reich.* 3. 674. *hort. cliff.* 392. 5. *fl. ſuec. n.* 716. *Huſſ. angl.* 350. *With.* 868. *Lightf. ſcot.* 450. *Sowerby engl. bot. t.* 107. *Hall. helv. n.* 169. *Scop. carn. n.* 1007. (Cirſium). *Neck. gallob.* 337. *Pollich pal. n.* 762. *Leers herborn. n.* 625. *Villars dauph.* 3. 4. *Krock. ſilef. n.* 1330. *Tabern.* 699. *Ger.* 1011. 6. *emac.* 1174. 6. *Raii hiſt.* 310.

C. lanc. latifolius. *Bauh. pin.* 385. *Mor. hiſt.* 3. *ſ.* 7. *t.* 31. *f.* 7. *Park.* 982. 9. *Pet.* 21. 7.

C. lanc. f. ſylveſtris Dodonæi. *Bauh. hiſt.* 3. 58.

*Leaves decurrent pinnatifid hiſpid; diviſions divaricate; calyxes ovate ſpiny villoſe; ſtem hairy.*

3. Carduus arabicus. *Arabian Thiſtle.*

*Lin. ſyſt.* 724. *Jacq. miſc.* 3. 56. *icon. rar. t.* 166.

*Leaves decurrent pinnatifid, lanuginouſly villoſe, diviſions divaricate; calyxes oblong ſpinuloſe ſeſſile aggregate.*

4. Carduus nutans. *Muſk Thiſtle.*

*Lin. ſpec.* 1150. *Reich.* 3. 675. *ſuec. n.* 717 *hort. cliff.* 393. 7. *Huſſ. angl.* 350. *With.* 869. *Lightf. ſcot.* 450. *Hall. helv. n.* 167. *Scop. carn. n.* 1011. *Neck. gallob.* 336. *Pollich pal. n.* 763. *Villars dauph.* 3. 5. *Krock. ſilef. n.* 1331. *Fl. dan. t.* 675. *Bauh. hiſt.* 3. 56. 3. *Raii ſyn.* 193. *hiſt.* 308. *Mor.* 7. 31. 6. *Pet.* 21. 1.

C. ſpinoſiſſimus latifolius ſphærocephalus vulgaris. *Bauh. pin.* 385.

*Leaves ſemidecurrent ſpiny; flowers drooping; ſcales of the calyx ſpreading at top.*

5. Carduus acanthoides. *Prickleſs Thiſtle.*

*Lin. ſpec.* 1150. *Reich.* 3. 675. *ſuec. n.* 718. *With.* 871. *Allion. pedem. n.* 531. *Krock. ſilef. n.* 1332. *Villars dauph.* 3. 7. *Pollich pal. n.* 764. *Jacqu. auſtr.* 3. *t.* 249. *Bauh. hiſt.* 3. 50. *Raii ſyn.* 194. 3. *hiſt.* 309. 3. *Mor.* 153. 7. 30. 11. *Pet.* 21. 3. *With.*

C. criſpus. *Huſſ. angl.* 350. *Lightf. ſcot.* 452. See n. 39.

C. polyacanthos. *Curtis lond. n.* 67. *Schreb. lipſ. p.* 15.

Conf. C. nigreſcens. *Villars dauph.* 3. 5. *t.* 20.

*Leaves decurrent ſinuate, ſpiny about the edge; calyxes peduncled ſolitary erect villoſe.*

6. Carduus criſpus. *Curled Thiſtle.*

*Lin. ſpec.* 1150. *ſyſt.* 724. *Reich.* 3. 676. *mant.* 461. *hort. cliff.* 393. *ſuec. n.* 719. *Hall. n* 165. *Pollich pal. n.* 765. *Leers herborn. n.* 627. *Villars dauph.* 3. 9. *Krock. ſilef. n.* 1333. *Fl. dan. t.* 621. *Bauh. hiſt.* 3. 59. 1.

*Leaves decurrent ſinuate, ſpiny about the edge; flowers aggregate terminal; ſcales of the calyx unarmed ſubariſtated expanded.*

7. Carduus polyanthemus.

*Lin. ſyſt.* 724. *Reich.* 3. 676. *mant.* 109.

C. pycnocephalus paluſtris. *Triumf. obſ.* 103. *fig.* Cirſium paluſtre lanceolarum, alato caule, polyanthemum. *Vaill. act.* 1718. *p.* 159.

*Leaves decurrent ſinuate ciliate, naked beneath; flowers peduncled heaped.*

8. Carduus paluſtris. *Marſh Thiſtle.*

*Lin. ſpec.* 1151. *Reich.* 3. 677. *ſuec. n.* 720. *Huſſ. angl.* 352. *With.* 873. *Lightf. ſcot.* 453. *Relh. cantabr. n.* 590. *Curtis lond.* 62. *Neck. gallob.* 337. *Pollich pal. n.* 766. *Leers herb. n.* 628. *Villars dauph.* 3. 8. *Krock. ſilef. n.* 1334. *Bauh. pin.* 377. *prodr.* 156. (*Fl. dan. t.* 621? With.) *Park.* 983. *Raii ſyn.* 104. *hiſt.* 309.

Cirſium. *Hall. helv. n.* 170. *Scop. carn. n.* 1004. *Gmel. ſib.* 2. 57. *t.* 23. *f.* 2.

Card. ſpinoſiſſimus erectus anguſtifolius paluſtris. *Mor. hiſt.* 3. 153. *n.* 12. *ſ.* 7. *t.* 32. *f.* 13. *Petiv.* 21. 4.

*Leaves decurrent toothed, prickly at the edge; flowers in racemes, upright, peduncles unarmed.*

9. Carduus pycnocephalus. *Italian Thiſtle.*

*Lin. ſpec.* 1151. *ſyſt.* 724. *Reich.* 3. 677. *Jacqu. hort.* 1. *t.* 44. *Gouan. illuſt.* 62. *Barr. obſ.* 935. *t.* 417. *Triumf. obſ.* 100. *t.* 101. *Krock. ſilef. n.* 1335.

*Leaves decurrent pinnatifid-ſinuate pubeſcent ſpiny, peduncles naked tomentoſe, calyxes deciduous.*

10. Carduus argentatus.

*Lin. ſyſt.* 725. *Reich.* 3. 678. *mant.* 280. *Jacqu. hort.* 2. *t.* 192.

*Leaves decurrent runcinate ſpiny; peduncles ſubtomentoſe one-flowered; calyxes ovate mucronate unarmed.*

11. Carduus auſtralis.

*Lin. ſyſt.* 725. *ſuppl.* 348. *Villars* 6.

*Leaves decurrent runcinate ſpiny; calyxes ſubſeſſile terminal.*

12. Carduus diſſectus. *Meadow Thiſtle.*

*Lin. ſpec.* 1151. *Reich.* 3. 678. *hort. cliff.* 392. *n.* 4. *Villars dauph.* 3. 15. *v. n.* 40.

Cirſium anglicum. *Lob. ic.* 583. *Dalech. hiſt.* 584.

C. majus, ſingulari capitulo magno, ſ. incanum varie diſſectum. *Bauh. pin.* 377.

*Leaves decurrent lanceolate; toothlets unarmed: calyxes ſpiny.*

13. Carduus cyanoides. *Blue-bottle-leaved Thiſtle.*
*Lin. ſpec.* 1152. *Reich.* 3. 679.
α. C. monoclonos. *Gmel. ſib.* 2. 42. *t.* 15.
β. C. polyclonos. *Gmel. ſib.* 2. 44. *t.* 16.
*Leaves decurrent pinnatifid linear quite entire unarmed petioled tomentoſe beneath.*

14. Carduus canus. *Hoary Thiſtle.*
*Lin. ſyſt.* 725. *Reich.* 3. 679. *mant.* 108. *Jacqu. auſtr.* 1. *t.* 42, 43. *Krock. ſileſ. n.* 1337.
Cirſium montanum maximum. *Park.* 960. *Raii hiſt.* 305.
C. tomentoſum rad. bulboſa. *Bauh. hiſt.* 3. 44.
C. max. aſphodeli rad. *Ger. emac.* 1181. 1.
Carduus tuberoſus. *Jacqu. vind.* 280.
*Leaves decurrent lanceolate eroſe-toothed ciliate-prickled, cobwebbed-ſubvilloſe on both ſides.*

15. Carduus pectinatus.
*Lin. ſyſt.* 725. *Reich.* 3. 679. *mant.* 279.
*Leaves decurrent lanceolate pinnatifid-pectinate, peduncles very long; heads when paſt flowering drooping.*

16. Carduus deſloratus. *Various-leaved Thiſtle.*
*Lin. ſpec.* 1152. *ſyſt.* 725. *Reich.* 3. 680. *Jacqu. vind.* 277. *auſtr.* 1. *t.* 89. *Hall. helv. n.* 164. *t.* 4. *Krock. ſileſ. n.* 1336.
C. cirſioides. *Villars dauph.* 3. 12.
Cirſium deſloratum. *Scop. carn. n.* 1003. *ann.* 2. 61.
Cirſ. anguſtifolium. *Bauh. pin.* 377. *prodr.* 155.
Cirſ. ſingularibus capitulis parvis. *Bauh. pin.* 377.
Cirſ. 3. montanum. *Cluſ. hiſt.* 2. 149. *f.* 1.
*Leaves decurrent lanceolate ſerrate ſubſpinoſe-ciliate naked, peduncles very long lanuginous one-flowered.*

17. Carduus monſpeſſulanus. *Monpellier Thiſtle.*
*Lin. ſpec.* 1152. *Reich.* 3. 680. *Villars dauph.* 3. 18. *Bauh. hiſt.* 3. 44. *fig.* 45. 1.
Cirſium 7. *Bauh. pin.* 377?
Cirſion. *Dod. pempt.* 737. 2?
*Leaves decurrent lanceolate ſubrepand ſmooth unequally ciliate; peduncles alternate, calyxes unarmed.*

18. Carduus pannonicus.
*Lin. ſyſt.* 725. *ſuppl.* 348. *Krock. ſileſ. n.* 1348.
Cirſium pannonicum. *Cluſ. hiſt.* 2. 148. *Bauh. hiſt.* 3. 1. 46. See n. 32.
*Leaves ſemidecurrent naked undivided ciliate, flower ſubſolitary.*

19. Carduus tuberoſus. *Tuberous Thiſtle.*
*Lin. ſpec.* 1154. *Reich.* 3. 681. *mant.* 461. *Pollich pal. n.* 768. *Villars dauph.* 3. 16. *Krock. ſileſ. n.* 1338.
Cirſium. *Hall. n.* 177.
Card. pratenſis, aſphodeli radice, latifolius. *Bauh. pin.* 377. *Mor. hiſt.* 3. *ſ.* 7. *t.* 29. *f.* 27, 28. *Raii hiſt.* 305. 2.
C. bulboſus monſpelienſium. *Lob. ic.* 2. *t.* 10.
β. C. prat. aſph. rad., fol. profunde & tenuiter inciſis. *Bauh. pin.* 377. *Tabern. ic.* 154. Jacea aculeata, ſ. tuberoſa.
*Leaves ſubdecurrent petioled ſubpinnatifid ſpiny, ſtem unarmed, flowers ſolitary.*

20. Carduus chius.
*Lin. ſyſt.* 725. *Jacqu. hort.* 3. *t.* 5.
*Leaves ſtem-cleaſping, the lower ones ſemidecurrent ſeuipinnatifid ciliate-ſpinuloſe; ſtem unarmed; peduncles one-flowered.*

21. Carduus parviflorus. *Small-flowered Thiſtle.*
*Lin. ſyſt.* 725. *Reich.* 3. 681. *mant.* 279.
*Leaves adnate at the baſe lanceolate naked eroſe ciliate-ſpinulous unarmed.*

22. Carduus linearis.
*Lin. ſyſt.* 726. *Thunb. jap.* 305.
*Leaves ſeſſile linear ciliate-ſpiny ſmooth; flowers terminal ſolitary.*]

23. Carduus Calabonæ. *Fiſh-Thiſtle.*
*Lin. ſpec.* 1153. *Reich.* 3. 681. *hort. cliff.* 393. 10.
Acarna major, caule non foliofo. *Bauh. pin.* 30.
A. Theophraſti Anguillaræ. *Lob. ic.* 2. 16. *f.* 1. *Dalech. hiſt.* 1484.
Polyacanthus Calabonæ, Acarnæ ſimilis. *Bauh. hiſt.* 3. 92. *Raii hiſt.* 315. 4.
*Leaves ſeſſile lanceolate quite entire, the edge with ternate ſpines.*

24. Carduus ſtellatus. *Starry Thiſtle.*
*Lin. ſpec.* 1153. *Reich.* 3. 682.
C. humilis aculeatus, &c. *Trinuſ. obſ.* 1. 96.
C. ſtellatus leucoii fol. *Dodart. mem.* 4. 261.
C. ptarmicifolius. *Mill. dict. n.* 1.
*Leaves ſeſſile entire lanceolate unarmed tomentoſe beneath; ſpines branched axillary; flowers ſeſſile aggregate.*

25. Carduus marianus. *Milk Thiſtle,* or *Ladies Thiſtle.*
*Lin. ſpec.* 1153. *Reich.* 3. 682. *hort. cliff.* 393. 9. *mat. med.* 130. *Huſſ. angl.* 353. *Wilt.* 874. *Curt. lond.* 3. 54. *Light. ſcot.* 454. *Gouan. monſp.* 422. *Neck. gallob.* 337. *Lees herb. n.* 629. *Allion. pedem. n.* 535. *Krock. ſileſ. n.* 1342. *Blackw. t.* 79. *Dalech. hiſt.* 1475. *fig. Trag. hiſt.* 850. *Fuchſ.* 56. *Ger.* 989. *emac.* 1150. *Dod.* 722. 1. *Lob. obſ.* 479. 1. *ic.* 2. 7. 2. *Park.* 976. 1. *Matth.* 676. *Raii hiſt.* 312. *Bauh. hiſt.* 3. 52. 2.
Silybum nervis fol. albis. *Hall. helv. n.* 181.
Cirſium maculatum. *Scop. carn. n.* 1009.
*Leaves ſtem-cleaſping baſi-ſemipinnatifid ſpiny, calyxes leafleſs; ſpines channelled double ſpined.*

[26. Carduus ſyriacus, *Syrian Thiſtle.*
*Lin. ſpec.* 1153. *ſyſt.* 726. *Reich.* 3. 682. *hort. cliff.* 393. 8. *upſ.* 250. 3. *Gron. orient. n.* 352. *Bauh. pin.* 380. (Acanus.) & 381. (Silybum, 2.)
C. luteus ſyriacus. *Cam. hort.* 35. *t.* 10.
*Leaves ſtem-cleaſping angular-ſpiny; flowers ſolitary ſubſeſſile furniſhed with about five leafleſs.*]

27. Carduus eriophorus. *Woolly-headed Thiſtle.*
*Lin. ſpec.* 1153. *Reich.* 3. 683. *hort. upſ.* 249. 1. *Huſſ. angl.* 354. *Wilb.* 875. *Light.* 455. *Gouan. monſp.* 423. *Neck. gallob.* 335. *Pollich pal. n.* 767. *Jacqu. auſtr.* 2. *t.* 171. *Villars dauph.* 3. 22. *Krock. ſileſ. n.* 1339. *Mill. fig.* 293.
C. eriocephalus. *Dod. pempt.* 723. *Cluſ. hiſt.* 2. 154. *Ger. emac.* 1152. *Bauh. hiſt.* 3. 57.
C. tomentoſus. *Lob. obſ.* 482. 1. *ic.* 2. 9. 2. *Park.* 978. *Raii hiſt.* 311.
Cirſium. *Hall. helv. n.* 168.—eriophorum. *Scop. carn. n.* 1008.
β. C. ſpurius. *Lin. upſ.* 249. *obſ.*
*Leaves ſeſſile pinnatifid in two rows, diviſions alternate erect; calyxes globular villoſe.*

[28. Carduus altiſſimus. *Giant Thiſtle.*
*Lin. ſpec.* 1154. *Reich.* 3. 684.
Cirſium altiſſimum. *Dill. elth.* 8. *t.* 69. *f.* 80.
*Leaves ſeſſile pinnatifid ſinnate, ſerrate unarmed, ſtem very branching, calyxes villoſe ſubſerrate.*

29. Carduus virginianus. *Virginian Thiſtle.*
*Lin. ſpec.* 1154. *Reich.* 3. 683. *Gron. virg.* 117. 2. *Jacqu. obſ.* 2. 13. *t.* 99.
Cirſium minus virginianum, &c. *Mor. hiſt.* 3. 130. *Raii ſuppl.* 197.
*Leaves lanceolate ſpinulous, tomentoſe beneath; ſtem unarmed leafy one-flowered.*

30. Carduus heterophyllus.
*Lin. ſpec.* 1154. *ſyſt.* 726. *Reich.* 3. 684. *hort. cliff.* 392. 2. *fauc. n.* 721. *lapp. n.* 192. *Villars dauph.* 3. 19. *Krock. ſileſ. n.* 1343. *Fl. dan. t.* 109.
C. helenioides β. *Huſſ.* 352. *Wilt.* 876.—diſſectus. *Huſſ. edit.* 1.
Cirſium britannicum, caule multifloro, fol. inſec. laciniatis. *Scop. ann.* 2. 60. 6.
C. *Hall. helv. n.* 180. β. *Allion. pedem. n.* 554. *t.* 34.
*Leaves ſtem-cleaſping lanceolate ciliate entire and laminate, ſtem with one or two flowers, calyx unarmed.*

31. Carduus helenioides. *Melancholy Thiſtle.*
*Lin. ſpec.* 1155. *ſyſt.* 726. *Reich.* 3. 684. *hort. cliff.* 392. 3. *upſ.* 250. 4. *Huſſ.* 352. *Wilb.* 876. *Light.* 457. *Krock. ſileſ. n.* 1344.
Cirſium. *Hall. helv. n.* 180. α. *t.* 7. *Scop. ann.* 2. 60. 4. *Mill. dict. n.* 5. *fig. t.* 64. *Bauh. hiſt.* 3. 46. 2. *Ger. emac.* 1183. 2. *Park.* 961. 5. *Raii ſyn.* 193. 2. *hiſt.* 306. 8. *Allion. pedem. n.* 553. *t.* 13.
*Leaves ſtem-cleaſping lanceolate toothed, ſpinules unequal ciliate, ſtem unarmed.*

32. Carduus ſerratuloides. *Saw-wort Thiſtle.*
*Lin. ſpec.* 1155. *Reich.* 3. 685. *Jacqu. vind.* 281. *auſtr.* 2. *t.* 127. *Gmel. ſib.* 2. 52. *t.* 22. & 23. *f.* 1. *Krock. ſileſ. n.* 1345.
Serratula. *Lin. hort. upſ.* 248.
Cirſium. *Scop. carn. n.* 1002. *Bauh. pin.* 377. 8. *Cluſ. hiſt.* 2. 148. 1. See n. 18.

*Leaves*

*Leaves rather ſtem-claſping lanceolate entire, ſerratures ſpiny-ſetaceous, peduncles one-flowered.*

33. Carduus tataricus. *Tartarian Thiſtle.*
*Lin. ſpec.* 1155. *Reich.* 3. 685. *Jacqu. auſtr.* 1. *t.* 90.
*Leaves ſtem-claſping lanceolate, ſerratures ſpiny-ſetaceous, flowers three-leaved.*

34. Carduus ciliatus. *Ciliate Thiſtle.*
*Lin. ſyſt.* 726. *Murr. in comm. gott. vol.* 6. 1784. *p.* 35. *t.* 5.
*Leaves half-ſtem-claſping pinnatifid laciniate ſpiny-tomentoſe beneath, ſcales of the calyx ciliate reflex at the baſe.*

35. Carduus flaveſcens.
*Lin. ſpec.* 1156. *ſyſt.* 727. *Reich.* 3. 686. *Cavan. diſp.* 35. *n.* 52. *t.* 46. *Krock. ſilef. n.* 1346.
*Leaves lanceolate entire unarmed toothed ſmooth, flowers leafleſs: weak-ſpiny.*

36. Carduus rivularis.
*Lin. ſyſt.* 727. *Jacqu. auſtr.* 1. *t.* 91.
Cirſium carniolicum. *Scop. carn. n.* 1005. *t.* 54. *Allion. pedem.* 543.
*Leaves at bottom pinnatifid into oblong diviſions, at top entire and ſerrate weak-ſpiny ſeſſile, ſtem unarmed, flowers in heads.*

37. Carduus mollis.
*Lin. ſpec.* 1156. *Reich.* 3. 686. *amen.* 4. 328. *Jacqu. vind.* 276. *auſtr. t.* 18. *Scop. carn.* 1000. (Cirſium) *Pollich pal. n.* 769. *Gouan. illuſtr.* 63. *Cluſ. hiſt.* 2. 151.
*Leaves pinnatifid linear tomentoſe beneath, ſtem one-flowered unarmed.*

38. Carduus acaulis. *Dwarf Carline Thiſtle.*
*Lin. ſpec.* 1156. *Reich.* 3. 686. *ſuec. n.* 722. *Hudſ.* 354. *With.* 877. *Lightf.* 458. *Relh. n.* 594. *Jacqu. ic. vol.* 2. *Villars dauph.* 3. 15. *Krock. ſilef. n.* 1347. *Pollich pal. n.* 770. *Leers herb. n.* 630. *Park.* 969. 4.
Cirſium. *Hall. helv. n.* 178. — acaulos. *Scop. carn. n.* 1010.
Card. acaulos, minore purpureo fl. *Bauh. pin.* 380. *Ger. emac.* 1158. *Raii hiſt.* 310. *Mor. ſ.* 7. *t.* 32. *f.* 12.
Chamæleon exiguus. *Bauh. hiſt.* 3. 63. 1. *Trag.* 852.
Carlina minor. *Cluſ. hiſt.* 2. 156. 1. *Lob. obſ.* 480. 3. *ic.* 2. 5. 1.
*Stemleſs; calyx ſmooth.*

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Other *Species*.

39. Carduus inclinans. *Thiſtle upon Thiſtle.*
*Wulf. bot. arr.* 870. *Hall. n.* 167. *γ.*
C. criſpus. *Hudſ.* 350. *Lightf.* 432. *Raii ſyn.* 194. *hiſt.* 309. 2. *Dod.* 739. 1. *Ger. emac.* 1173. 3. *Mor. hiſt.* 3. 153. *n.* 11.
*Leaves decurrent thorny at the edge, calyxes roundiſh, lax, ſcales of the calyx ſubulate ſtraight, the innermoſt unarmed coloured.*

40. Carduus pratenſis. *Engliſh ſoft* or *gentle Thiſtle; ſingle-headed*, or *Meadow Thiſtle.*
*Hudſ.* 353. *With.* 877. *Jacqu. auſtr.* 1. *t.* 42.
C. heterophyllus. *Lightf.* 456.
Cirſium. *Cluſ. hiſt.* 2. 148. 1. *Bauh. pin.* 377. 8. *Ger. emac.* 1183. 3. 5. *Park.* 961. 4. *Mor.* 7. 29. 12, 13. *Bauh. hiſt.* 3. 45. 2. *Raii ſyn.* 193. *hiſt.* 306. 7. *Lob. ic.* 583. 1. *Pet.* 22. 1. *Bauh. hiſt.* 3. 45. 2.
*Leaves ſeſſile half-ſtem-claſping lanceolate ſomewhat toothed fringed with ſmall unequal thorns, ſtem moſtly one-flowered.*

41. Carduus carniolicus.
Cirſium carniolicum. *Scop. carn. n.* 1005. *t.* 54.
C. rivularis. *n.* 36.
*Lower leaves pinnatifid on ſhort petioles, upper ones ſtem-claſping, heads (three or four) terminal, braced.*

42. Carduus carlinoides. *Pyrenean Thiſtle.*
*Allion. pedem. n.* 536. *Gouan. illuſtr.* 62. *t.* 23. *Ait. hort. kew.* 3. 139.
C. pyrenaicus tomentoſus, fl. purpureis glomeratis. *Tourn. inſt.* 441.
*Leaves decurrent decurſively pinnate, pinnules palmate-quadrifid aculeate woolly, ſtem corymbed many-flowered, flowers glomerate.*

43. Carduus mediis.
*Gouan. illuſtr.* 62. *t.* 24. *Conſ. fl. aragon.* 790.

Cirſium medium. *Allion. pedem. n.* 542. *t.* 49. *f.* 2.
*Leaves decurrent pinnatifid thorny about the edge, ſtem one-flowered, peduncle very long, ſcales of the calyx unarmed ſpreading briſtle-ſhaped.*

44. Carduus ochroleucos.
Cirſium ochroleucum. *Allion. pedem. n.* 546. *Hall. helv. n.* 174.
*Leaves pinnate, pinnas ciliate, ſcales of the calyx recurved.*

45. Carduus pyrenaicus.
*Jacqu. obſ.* 4. 11. *Ger. prov.* 179. *n.* 13.
Cirſium pyrenaicum. *Allion. pedem. n.* 549. *t.* 12.
*Leaves decurrent oblong-lanceolate ciliate at the edge, ſpiny and tomentoſe on both ſides, flowers ſubſeſſile.*

46. Carduus paniculatus. *Panicled Thiſtle.*
*Ait. hort. kew.* 3. 143.
*Leaves ſemidecurrent oblong-lanceolate unequal ciliate ſmooth, the lower lyrate waved; flowers paniced.*

47. Carduus rigens. *Upright Alpine Thiſtle.*
*Ait. hort. kew.* 3. 144. *La Chenal alt. helv.* 4. 294. *t.* 16. *Hall. helv. n.* 176. (Cirſium.)
*Leaves oblong-lanceolate, ſmooth, thorny at the edge, pinnatifid; ſegments obliquе lobed; calyxes oblong bracted.*

48. Carduus Diacantha.
*Billard. ic. fr.* 2. 7. *t.* 3.
*Leaves ſeſſile lanceolate tomentoſe underneath, ſpines in pairs, flowers corymbed.*

49. Carduus pinnatifidus.
*Cavan. diſp.* 58. *n.* 91. *t.* 83.
*Leaves pinnatifid tomentoſe, nerves woolly, ſtem one-flowered.*

50. Carduus gnaphaloides.
*Cyrill. rar. neap.* 1. 27. *t.* 9.
*Leaves ſeſſile in a ſort of whorl, lanceolate, quite entire, tomentoſe beneath.*

51. Carduus tenuiflorus. *Slender-flowered Thiſtle.*
*Curtis lond. n.* 67.
C. acanthoides. *Hudſ. angl.* 351. *Lightf. ſcot.* 451. *Hall. helv. n.* 166. *Bauh. hiſt.* 3. 516.
C. ſpinoſiſſimus capitulis minoribus. *Phyt. brit. Raii hiſt.* 309. *ſyn.* 194.
C. polyacanthos, capit. longioribus & tenuioribus, fol. albicantibus. *Mor. hiſt.* 3. 153.
*Leaves decurrent prickly about the edge, branches ſtiff, calyxes aggregate ſeſſile oblong-conical, ſcales upright ſpreading at top and prickly at the end.*

DESCRIPTIONS, *&c.*

Thiſtles are known by their prickly leaves, in ſome ſpecies however the prickles are ſoft and harmleſs: they are ſeſſile, and in many ſpecies decurrent. This genus is by ſome authors divided into two, from the *pappus*, egret or down of the ſeed. Such as have a ſimple or hairy down they call *Carduus*; and ſuch as have a plumoſe or feathered down, *Cirſium*. Others unite ſeveral ſpecies of *Cnicus* to this genus. *Carduus marianus* having the ſcales of the calyx ſpiny about the edge, is more properly a *Carthamus*; according to Monſ. Lamarck. Our common Way-thiſtle (*Carduus viarum* or *arvenſis*) is removed by Linnæus into the genus Serratula.

1. Root annual. Stem three feet high. Radical leaves ſcarcely petioled, cloſe to the ground. Stem-leaves ſmooth, ſhining green with white ſpots; beneath paler and hairy, half-ſtem-claſping. A triple membranous wing runs uninterrupted along the ſtem. Peduncles woolly, one-flowered, generally naked, or with only a ſmall leaf or two, grooved and tomentoſe. The leaves are pinnatifid nearly to the middle, ſinuate-pinnatifid, having many ſhort lobes ending in harmleſs ſpines, with a longer ſpine at the end of each lobe: the whole form is oblong-ovate: the leaves on the branches are more ſhining, have the teeth or ſmall lobes more produced, with a longer and firmer ſpine; and the form is rather lanceolate. Flowers upright. Calyxes ovate-conic, lanuginous; ſcales erect, green, not hooked or reflex, terminating in a harmleſs ſpine. Corolla purple or white. Down ſimple*. Native of the county of Nice, and Campania.

* Allioni.

Retzius has a ſpecies, which he received under the name of *C. leucographus*, but he takes it to be different, and has given it the name of *Cardnus peregrinus*. He ſays it is well deſcribed by Ray, under the name of *C. lætiens peregrinus Cameraria*, in the 312th page of his hiſtory. He thus deſcribes it himſelf (*Obſ.* 1. 27. *n.* 92.) Root annual. Stem three feet high, branched, ſtriated, winged, naked, but the terminating branches tomentoſe. Leaves ſinuate-toothed, ſpiny, ſeſſile, decurrent, above naked ſpotted with white, beneath tomentoſe. Peduncles terminating and axillary; the firſt branched, tomentoſe, winged, long, with from three to ſix flowers; the latter very ſhort. Calyxes ſeſſile and pedicelled, oblong, almoſt cylindric, with ſoft ſpines, ſomewhat tomentoſe, deciduous. Corollules few, red, ſcarcely longer than the calyxes. Seeds few, white, gummy, and adhering to the down.

2. Root biennial. Stem upright, three or four feet high, angular, downy, frequently purple. Leaves half-ſtem-claſping, decurrent to the next, downy and ſea-green underneath, hairy and deep green above, pinnas lanceolate, the terminating one long, the ſide ones moſtly divided to the baſe into two ſegments, one pointing upwards, the other downwards, terminating as do alſo the wings of the part running down the ſtem, in ſharp ſtiff white thorns, which are extenſions of the ribs. Calyx with numerous ranges of lanceolate ſcales, ſomewhat tomentoſe, ending in ſharp, ſtiff, white thorns. Corolla purple, ſometimes white. Down plumoſe, almoſt as long as the bloſſom[a]. The inner ſcales of the calyx are unarmed, briſtle-ſhaped, and as it were dried up[c].

It is ſometimes found of the height of a man, with heads twice the ſize of the common: as alſo with ſmaller heads, in all reſpects a leſs plant[d].

Road ſides, hedges, and fallows; flowering in july.

In Yorkſhire it is called Bur-thiſtle.

This, in common with moſt of the Thiſtles, is looked upon merely in the light of a noxious weed; and yet Linneus remarks very judiciouſly that it preſerves annual plants, by protecting them with its ſpines, and giving them an opportunity of feeding in quiet. If a heap of clay be thrown up, ſays Dr. Withering, nothing would grow upon it for ſeveral years, did not the ſeeds of this plant, wafted by wind, fix and vegetate thereon. Under the ſhelter of this, other vegetables appear, and the whole ſoon becomes fertile. The flowers, like thoſe of the Artichoke, *&c.* have the property of curdling milk[e]. The ſeeds are eaten by ſmall birds.

3. Root annual, fuſiform, white. Stem erect, about a foot high, ſcarcely branched, lanuginous and hoary. Leaves ſquarroſe, ciliate-ſpiny, dirty green above, pale beneath; ſtem-leaves ſeſſile, radical petioled, leſs cut and more obtuſe. Flowers oblong, ſeſſile, erect, aggregate at the end of the ſtem, and the very ſhort axillary branchlets. Calyxes green and ſomewhat ſquarroſe; ſcales lanceolate-acuminate, ending in a yelloviſh ſharp prickle. Corollules purpliſh. Anthers dark purple. Pappus hairy, ſeſſile, brown. Seeds ſmooth[f].

4. Stems two to three feet high, overſpread, as are alſo the leaves, peduncles and calyxes with a cottony down. Leaves decurrent, not to the next leaf, but ending midway; pinnas ovate, armed with ſtrong prickles. Peduncles one-flowered. Flower hanging down, ſmelling very ſweet, particularly in the evening. Styles bent back towards the ſide. Pappus ſimple, nearly as long as the floret. The ſcales of the calyx are lanceolate and woolly, commonly of a dull red colour, and end in ſtrong ſpines; the outer ones ſtanding wide and open, the inner erect, and unarmed[g]. Scopoli affirms that the heads are more often erect than pendulous in Carniola. This is certainly not ſo with us. It is well known to entomologiſts on account of the moths, which feed copiouſly on it[h].

[a] Woodw. Mſ. [b] Linn. ſpec. [c] Ray, and Bauh. hiſt. *f.* 2, 3. [d] Linn. ſuec. [e] Jacquin. [f] Lin. ſpec. & ſpec. Woodw. Mſ. Lightf. [g] Linn. ſuec.

The dried flowers of this ſpecies, as well as the former, are ſometimes uſed to curdle milk.

Paſtures in a calcareous ſoil. Road ſides in a ſandy or gravelly ſoil. Common on moſt of the fallows about Cambridge.—Biennial. It flowers in june, the firſt of the Thiſtles.

5. Differs from *C. nutans* in having erect calyxes; from *C. criſpus* in having the calyxes ſolitary and villoſe: the inner ſcales are ſpreading. Corollules ſemiquinquefid, but the lower ſegment ſeparated nearly to the baſe, ſo that it is almoſt bilabiated, the upper-lip being quadrifid, the lower ſimple, which is not the caſe in n. 4. 6. Styles double the length of the floſcules. Leaves haſtate-pinnate, with white upright hairs ſprinkled underneath as in *C. criſpus*. Stem ſcored with white, elevated and as it were bony ſtreaks. Peduncles thorny with curled wings, in which it differs from *C. criſpus*. The flowers are ſmaller than in *nutans*, larger than in *criſpus*[i].

Radical leaves at firſt have ſome reſemblance to thoſe of *C. marianus*. Flowers ſmall, pale purple, crowded on the top of the ſtem, which is as high as in the *criſpus*, but more ſlender, and with fewer, ſtraighter branches, the wings broader, the ſpines fewer. Heads much ſmaller. The colour of the whole plant aſh or gray[k]. Leaves pinnatifid. Root-leaves blunt; pinnas broad, ſomewhat pentangular, with five obſolete lobes, the nerves terminating in acute yellow ſpines, tomentoſe beneath, above ſmooth, except a few ſhort hairs ariſing from glands. Stem-leaves acute, pinnas triangular, confluent, with wings running down the ſtem, armed with numerous rigid yellow ſpines of various lengths. Scales of the calyx lanceolate, yelloviſh green; the upper ones ſpreading, the inner ones chaffy, all tipped with ſharp ſpines. Segments of the corolla ſomewhat longer than the anthers. Down ſimple, nearly as long as the corolla[l].

It is called by Gerarde (p. 1010.) Thiſtle upon Thiſtle; by Parkinſon (p. 981. n. 5.) the moſt prickly Thiſtle.—On ditch-banks, road ſides, waſte places, borders of corn fields in moſt parts of Europe: flowering from june to ſeptember.

There is much confuſion in this and the following ſpecies, and it is very doubtful whether our *acanthoides* be the ſame with that of many foreign authors. Haller received our plant both from Dillenius and Hudſon, and determines it to be the *acanthoides* of John Bauhin, but not of Linneus: the latter he takes to be only a variety of *C. criſpus*, with the ſpines of the leaves ſtronger; the flowers larger, ſolitary and erect. Pollich alſo deſcribes the flowers of the *acanthoides* as being ſolitary. The late Mr. Lightfoot ſays poſitively that *C. acanthoides* of Linneus is a different plant from ours, though he retains the name. Mr. Curtis however, who has taken much pains to aſcertain this Thiſtle, is of opinion, that the *C. criſpus* of Hudſon and Lightfoot, is the ſame with the *acanthoides* of Linneus, which he names *polyacanthus*, after Moriſon, Parkinſon (theat. 881. 5.) and Schreber. To the *acanthoides* of John Bauhin, Hudſon and Lightfoot, he gives a new name *ſolſtitialis*.

He deſcribes this ſpecies thus. *Root* annual, ſimple, whitiſh, furniſhed with numerous fibres. *Stalk* from two to four feet high or more, upright, very ſlightly grooved, hirſute, furniſhed with four or five wings, which are jagged and extremely prickly; branched, often to the bottom: branches very long, ſpreading, producing flowers at the extremities. *Leaves* ſeſſile, decurrent, lanceolate, cut into lobes which are oppoſite, ſcalloped, toothed, and a little curled, ſpiny on the edge, above green, beneath whitiſh and ſomewhat woolly. *Flowers* middle-ſized, terminating, for the moſt part cluſtered, purple, odoriferous, ſeſſile, or ſtanding on ſhort pedunicles, upright or ſomewhat nodding. Common calyx nearly round, looſely imbricate; ſcales ſpreading and ſomewhat reflex, ſlightly tomentoſe and harmleſs. Corolla as long again as the calyx. *Seeds* ob-

[i] Lin. ſpec. & ſuec. [k] Ray. [l] Woodw. Mſ.

long, smooth, pale brown, slightly ſtriated, blunt at both ends: down ſimple.

It is ſometimes found with white flowers, and in different ſituations varies from two to five feet in height, is more or leſs hairy, and has its flowers more or leſs cluſtered.

In its general appearance it approaches near to the *paluſtris*, from which it may be diſtinguiſhed by growing in dry places; being more branched, and the extreme flowering branches being uſually more bowed downwards; theſe are however ſometimes perfectly upright; the moſt certain mark is, that the calycine ſcales are looſe, as in Burdock, and almoſt as harmleſs, whereas in the *paluſtris*, as in *arvenſis*, *acaulis*, &c. they are cloſely imbricate: the flowers alſo are more odoriferous.

6. Stem green. Leaves totally decurrent, harmleſs, but rather pungent on the ſtem. Pedicels white-cottony. Calyx ſquarroſe, the ſize of a hazel nut, ſcales wrinkled above [a].

*C. criſpus* of Linnæus does not agree with our plant (n. 39.) either in the character or deſcription. They are nearly allied in habit and ſtructure; but the peduncles and under ſurface of the leaves in the *criſpus* are covered with a white cotton; the calyxes are ſmaller [b]. *See* n. 39.

It grows wild in the ſame ſoil and ſituations with the foregoing; flowers about the ſame time; and like that is annual.

7. This ſo much reſembles *C. criſpus*, as not to be diſtinguiſhed from it without difficulty; but neither the petioles nor leaves are tomentoſe underneath. Stem ſolitary. Leaves deeply runcinate, not rigid, ſhuntiſh, ciliate with weak ſpines, hollow-veined, paler beneath but not white. Upper ſtem-leaves lanceolate, croſs, decurrent without interruption, curled, and a little pungent. Peduncles curled, ſcarcely cobwebbed. Flowers uſually three or four at the top, ſubſeſſile. Corollas in the outſide purple, in the diſk red. Anthers violet. Styles white. Stigmas purple. Native of Rome. Biennial [c].

8. *Root* biennial. *Stem* four, five or ſix feet in height, in woods frequently ten or twelve, upright, branched, multangular, hirſute with numerous long white hairs, winged, prickly, variegated longitudinally with green and purple. *Leaves* ſeſſile, bent downwards, lanceolate, pointed, jaggedly toothed, ſegments horizontal, oppoſite, together with the teeth broad and ſomewhat blunt, the lowermoſt tooth of each ſegment curled and elevated, veiny, hirſute with hairs ſtanding remotely, above of a deep green colour, glaucous on the under ſide, the midrib pale green, and extremely hairy underneath, the margin of the leaf prickly, the prickles purpliſh at the baſe and white at the end; the uppermoſt ſtem-leaves elongated and linear at the extremity. Five or ſix rows of prickly rudiments of leaves run interruptedly down the ſtem, rendering it winged and prickly. Flowers purple, ſeſſile, in cluſters on the top of the ſtem and branches. Calyx ovate, ſmooth, a little woolly: ſcales cloſely imbricate, ovate, convex, green tipped with dark purple, without any rib, but ending in a ſhort ſpreading prickle not pungent, beneath which is a ſmall linear prominence: the inner ſcales are pointed only without prickles. Corolla twice as long as the calyx. Seeds whitiſh and ſhining. Down ſhorter than the corolla, having the rays fringed with long hairs.

Being never found but in wet places, it is not likely to be miſtaken for any other Thiſtle; it has uſually more purple about it than the reſt of its kindred; and formidable as its ſtems and leaves are from their numerous prickles, the heads of flowers and peduncles are perfectly harmleſs [d].

It is wild in moſt parts of Europe in marſhes, boggy woods, and moiſt heaths, commons, and meadows; flowering in July.—It varies with a white flower, as moſt of the Thiſtles occaſionally do.

In Yorkſhire it is called Red Thiſtle.

The tender ſtalks of this (and moſt of the ſorts) are eſculent, being firſt peeled and boiled. They are thus eaten, as Linnæus informs us, by the inhabitants of Smeland.

9. This is a ſort of intermediate plant between *C. criſpus* (n. 6.) and the *Gossypinus* (or Cotton-thiſtle). Stem a foot high or more, white with hairs; the edges of the leaves uninterruptedly decurrent on each ſide, alternately flexuoſe and thorny. Radical leaves ſublanceolate, ſubſinuate; ſtem-leaves oblong, ſemipinnatifid, toothed, pubeſcent on both ſides, whitiſh underneath, cottony or woollyiſh. Peduncles ſhort, cottony-white. Pedicels with three or four flowers. Floſculus generally three or four. Calyx the ſize of a hazel-nut, oblong, imbricate with ſubulate, erect, ſpreading, ſubſpinous ſcales. Corolla purple with an erect border, the ſize of *Serratula ſtellerio*. It differs from the *acanthoides* in having naked not winged peduncles. The calyxes when ripe fall off whole [e].

According to Gouan: The ſtem-leaves are obliquely ſemidecurrent, one lobe of the baſe being continued down longer than the other, but the other next the ſtem between leaf and leaf being naked. The upper leaves and thoſe of the branches ſcarcely decurrent, rather ſtem-claſping; hence the branches and peduncles are naked; only with a looſe nap. Flowers glomerate, ſubſeſſile, from one to ſix. Calyx the ſame ſize as in *C. criſpus*, but ſhorter; ſcales ovate, the outer ſhorter, pubeſcent towards the end and terminating in a ſpine, the inner longer, without ſpines, and more flexible [f].

Native of the ſouthern parts of Europe. Linnæus, Gouan, &c. make it perennial: according to Allioni it is annual. It was cultivated in 1739, by Mr. Miller [g].

10. Stem a foot high, flexuoſe, even, alternately branched. Leaves uninterruptedly decurrent with a flexuoſe thorny edge, toothed with pungent ſpines, ſprinkled eſpecially towards the ſinuſes with ſilvery ſpots. Peduncles terminal, the length of the whole plant, with hardly any leaves, erect. Calyx the ſize of a hazel-nut; ſcales cloſely imbricate, the rips ſubulate, unarmed, erect; when ripe it falls entire with the ſeeds. Corolla very ſmall, purple, mixed with the down, ſcarcely gaping. Anthers blue. Down aſh-coloured. It approaches to the foregoing by its milky-ſpotted leaves, and one-flowered peduncles. It is remarkable that many Egyptian plants are ſpotted with white, as this and three other ſpecies of Thiſtle—*marianus*, *ſyriacus*, and *peregrinus*. *Centaurea galactites*: and *Aſparagus ægyptiacus*. This is an annual plant [h].

11. Stem a foot high, round, ſtriated, woolly-villoſe. Leaves alternate, remote, ſeſſile, decurrent but ſcarcely to the next, oblong, ſubſinuate at the ſides, rather cobweb-villoſe, the veins of the ſides running out into white thorns. Calyxes many (the lateral ones ſolitary) ovate, ſmall, imbricate; ſcales lanceolate, acuminate with a ſpine, erect, rather ſpreading. Corolla conſiſting of about eight purple floſcules. It is like the foregoing, but the flowers are not pedunculed. Native of ſouthern Europe [i].

Villars refers to this *C. noſtratus*, with a mark of doubt, under his *C. acaulis*, n. 6. See more under *Carduus defloratus*, n. 16.

12. The leaves are wholly void of prickles; it is different therefore both from *C. heterophyllus* and *boleroides* [k].

Villars has a plant under this name, which he aſſerts to be that of the environs of Paris, of *Lobel*, *obſ.* 314. *ic.* 583. *Bauh. hiſt.* 3. 45. *Park. theat.* 961. *Rai hiſt.* 306. &c. Cirſium anglicum: but he doubts whether it be the *C. diffuſus* of Linnæus, becauſe that author ſays that the ſtem is winged, and compares it with *C. heterophyllus* and *boleroides*, which have more affinity with *C. monſpeſſulanus* than with this. According to Villars, the root is perennial and creeping; the ſtem from a foot and a half to two feet in height, ſtraight, grooved, whitiſh, and terminated by one or two flowers; the leaves oblong, lanceo-

[a] Linn. mant. [b] Woodw. & Stokes in With. [c] Linn. mant. [d] Curtis lond. [e] Linn. ſpec. [f] Gouan. [g] Hort. kew. [h] Linn. mant. [i] Linn. ſuppl. [k] Linn. ſpec.

late and ſeſſile, cut about the edge, and white beneath: calyx a little open, but not prickly; the flower red. See n. 40.

13. The leaves have a white cotton underneath without ſerratures or briſtles: in α. they are almoſt like thoſe of *Sorbus*—in β. they are very narrow and linear. The ſcales of the calyx are linear, acuminate, ſubvilloſe; in α. the ſize of the Scabious; in β. of *Cyanus*, or Blue-bottle. It has the air of Jacea moſchata. *Bauh. hiſt.* 3. 34.[1] According to Pallas (itin. 3. 594.) Centaurea amplexicaulis. *Gmel. it.* 1. *t.* 24. is a ſingular variety of this; which grows wild in Tartary. Introduced 1778, by Mr. William Malcolm[2].

14. Roots fuſiform, aggregate, fleſhy, white, like Skirrets. Stem four feet high, green, angular, cobwebbed. Leaves ſubſinuate-toothed, ciliate with little white ſpines ſcarcely pungent, keeled, uninterruptedly decurrent, with wings ſtanding out. Peduncles terminal, elongated, with ſmall, green floral leaves. Flowers ſolitary, purple. Calyxes unarmed, with a white line on the outſide of the ſcales. Native of Auſtria and Tende. Perennial[3].

Cultivated in the gardens of Parkinſon, Tuggye and Ray. It flowers in july.—Introduced 1775, by Joſ. Nich. de Jacquin, M. D.[4]

15. Stem two feet high, erect, even, unarmed, as is the whole plant. Leaves uninterruptedly decurrent, with a pale keel beneath, pinnatifid or very deeply toothed; teeth equal, lanceolate, large, quite entire, ſubciliate, terminating in a weak ſpine, marked at the baſe before with a ſmall tooth bending down. Peduncles terminal, one-flowered, almoſt without leaves, a little tomentoſe. Scales of the calyx linear, ſpreading. Flowers the ſize of Burdock, purple with a long piſtil; filaments white, erect. Biennial. It came up from ſeeds ſent from Penſylvania[5].

16. Stems many, angular, ſmooth, leafy, generally ſimple. Peduncles leafleſs, ſomewhat woolly, very few. Flower ſolitary erect. Scales of the calyx mucronate, ſoft, green, narrow, ſmooth, ſpreading. Seeds pale brown and ſhining. Pappus ſimple. The heads, when the flowers are ripe, or when in ſeed ſometimes hang down, and are ſometimes erect[6].

Villars obſerves, that this plant varies remarkably in the form of its leaves, but that the ſpecific characters may eaſily be eſtabliſhed on its creeping, blackiſh, rape-like roots; on the ſtem winged at bottom, naked at top, terminated by one or two flowers; on its oblong, prickly leaves, more or leſs cut and fringed, but always of a dark green; on its lengthened woolly peduncles; on its ſmooth, green calyx, without prickles; and on its flowers of a fine red colour, and often nodding.

His *C. auroſicus* has an affinity to the moſt prickly varieties of this, but it is ſmaller, and ſtill more prickly: the flowers alſo are very much alike. He has another ſpecies, C. Roſenii, n. 13. *t.* 21. which perhaps may be only a variety of *defloratus*.

Linnæus ſays that it reſembles *C. ferratuloides* (n. 32.), but the calyxes are narrower, the leaves decurrent, and the heads not nodding.

According to Haller, it is a variable plant, having moſt uſually a naked ſtem, and many firm, ſhining, ſmooth leaves next the ground, either entire or ſemipinnate. Flower ſpecious, purple, often nodding when advanced. It is frequently found with the whole ſtem branching, and the flowering branches ſhorter: and ſometimes with the leaves ſo prickly, as to reſemble the Carline Thiſtle.

Native of Montpellier, Switzerland, Carniola, Gorizia. Perennial. Introduced 1775, by J. N. de Jacquin, M. D.[7]

17. This alſo has the air of *C. ferratuloides*. Leaves ſmooth on both ſides, glaucous, entire; radical ones repand. A few heads at the top of the ſtem on ſhort peduncles[1]. About Montpellier, county of Nice, &c. Perennial. Cultivated 1570, by Mr. Hugh Morgan[2].

[1] Linn. ſpec. [2] Hort. kew. [3] Linn. mant. [4] Hort. kew. [5] Linn. mant. [6] Jacquin. [7] Hort. kew. [1] Linn. ſpec. [2] Hort. kew. from Lobel.

18. Unarmed. Leaves ſmooth and even, with ſoft briſtles. Heads the ſize of *Serratula arvenſis* (Way-thiſtle) unarmed; the ſcales marked with a white line. Corolla pale purple.—Auſtria. Perennial[1].

19. Leaves unarmed, green on both ſides, even. Root-leaves pinnatifid, in other reſpects like the ſtem-leaves, which are cordate-lanceolate, toothed, ciliate with inert, unequal little prickles. It has the flower of *C. heterophyllus*, only ſmaller[1].

According to Pollich, the ſtem is erect, two feet high and more, grooved-angular, rough, mollly unarmed. Branches long, ſubtomentoſe. Calyx roundiſh, imbricate, unarmed, contracted at the neck; ſcales lanceolate, a little reflected at the tip, ending in a ſoft ſpine. Corolla purple. Down ſimple.

The leaves, ſays Haller, above are a little hairy, below ſubtomentoſe: in the Montpellier plant hoary all over.

According to Pollich they are pubeſcent on both ſides and roughiſh.

Villars has a ſpecies, (n. 17.) *Cirſium pumilum*, which he ſays reſembles this: it is only three or four inches high, and has not tuberous roots: there is only one purple flower, in an oblong calyx, the ſcales of which are not prickly: the leaves are lanceolate, ſinuate, ciliate, and beneath hoary.

Montpellier, Leipſic, Bohemia, the Palatinate, Auſtria, Geneva, Switzerland, county of Nice: flowering in july and auguſt. Perennial.—Cultivated in 1683, by Mr. James Sutherland[2].

20. Stems the height of a man, branching from top to bottom, angular, villoſe, erect. Leaves lanceolate-oblong, the upper ſurface almoſt ſmooth and deep green, the lower ſomewhat villoſe and pale, but no where woolly: acuminate and pinnatifid; ſegments lanceolate, ciliate-ſpiny, almoſt harmleſs; radical leaves a foot and half long; lower ſtem-leaves ſemidecurrent, upper half-ſtem-claſping or ſeſſile. The branchlets end in one-flowered peduncles, having one or two ſmall leaves on them, below the flower a little woolly and aſh-coloured, always erect. Calyxes ovate, not hirſute; the ſcales have an oblong glutinous bump on the back, and end in a ſhort, harmleſs, dark purple ſpine. Corollas and ſtyles purpliſh fleſh colour. Anthers whitiſh. Seeds ſhining. Pappus plumoſe. Hairs on the receptacle browniſh. Jacquin received it from Marſigli of Padua, about the year 1770. It is a native of Chios[1].

21. Stem erect. Leaves repand-toothed, green on both ſides. Flowers terminal, peduncled, the ſize of *Serratula tinctoria*, white, with very long ſtyles. Calyx ovate, imbricate with ſcales having a white keel, and a weak ſpine at the tip. Native of the ſouthern ſubalpine mountains. Perennial[2]. Introduced in 1781, by M. Thouin[3].

22. Stem herbaceous, erect, round, ſtriated, ſmooth, unarmed, a foot high and upwards. Branches alternate, ſpreading, like the ſtem, a little tomentoſe at the end. Flowers ſmall. Calyxes ſubtomentoſe at the baſe, ſmooth at the top[1].

23. This is a biennial plant, which riſes with an upright ſtalk ſix feet high. The leaves are long, and armed with triple ſpines at every indenture of the edge. The flowers come out in cluſters from the top of the ſtalk; they are purple, and are ſucceeded by ſmooth, oval, black ſeeds. The nap on the under ſurface of the leaves is thick and ſaffron-coloured; but in ſome plants it is hardly apparent[2]. It has the trivial name from Caſabona, herbariſt to the Grand Duke of Tuſcany, who ſent the ſeed to John Bauhin.—Native of the South of Europe. Cultivated 1714[3].

24. Stem a foot high, ſtraight, round, cottony. Leaves three inches long, very narrow at the baſe, and about half an inch wide from the middle to the end. At every axil, except towards the bottom are

[1] Linn. ſuppl. [2] Linn. mant. [3] Hort. kew. [4] Jacquin. [5] Linn. mant. [6] Hort. kew. [7] Thunberg. [8] Linn. edit. [9] Hort. kew.

four thorns, two on each ſide. The ſtem divides at top into ſeveral branches, each ending in a ſpiny head, under which are three leaves. Floſcules purple. Annual[1]. Native of Sicily and the county of Nice. Introduced 1771, by John Earl of Bute[2]. But it muſt have been cultivated long before by Mr. Miller.

25. Radical leaves ſpread on the ground, from one to two feet or more in length, with white veins on the upper ſurface. Stem-leaves partly ſurrounding the ſtem, ſpreading; the uppermoſt bent back; the baſe of each preſſed cloſe to the ſtem: which is from three to ſix feet high, branched, tomentoſe, grooved; at top naked, ſtriated. Flowers ſolitary, large, purple. Calycine leaves—the lowermoſt roundiſh, edged with ſpines—middle ones edged with ſpines towards the bottom, and running out to a point, ſpreading, rigid, channelled on the upper ſide, and terminating in a yellowiſh ſpine—the upper and innermoſt lanceolate, without ſpines, purple at top and notched on the edges. Seeds ſhining, blackiſh, crowned with a ſtiffiſh, ſimple, white down, growing obliquely. The beautiful milky veins forming an irregular network on the leaves, would form an obvious character to diſtinguiſh this ſpecies, if they were not ſometimes found wholly green; we muſt then have recourſe to the ſtrong ſpines of the calyx[3]. On banks, by road ſides, and in waſte places; flowering from may and june to july and auguſt.

All the authors that I have conſulted mark our Ladies Thiſtle as an annual plant, except Mr. Miller and Mr. Relhan, who mark it as biennial. My conſtant obſervation agrees with theirs, and I believe moſt of the Thiſtles are biennial.

This is eaten, when young, as a ſalad, and is by ſome perſons blanched, and dreſſed as a curious diſh. The tender leaves ſtripped of their ſpines, are boiled and eaten as greens. The young ſtalks peeled and ſoaked in water to take out the bitterneſs, are excellent. The ſcales of the calyx are as good as thoſe of Artichokes. The root is good to eat early in the ſpring. The ſeeds are large, and contain a portion of oil, whence they have ſometimes been uſed in emulſions, to thin the blood, and to cure ſtitches and pleuriſies. With us theſe are not in uſe; and Ray ſays that it is a culinary rather than a medicinal plant, and that it is frequently ſown in the Engliſh gardens for ſalads and the uſe of the kitchen. An emulſion of the ſeeds is however ſtill preſcribed by the German phyſicians in the pleurity; the doſe from one dram to three: and the Italian phyſicians give the expreſſed juice in agues. Granivorous ſmall birds feed much on the ſeeds of this and other Thiſtles, particularly the Goldfinch; whence that bird has the name of *Carduelis*[4].

This plant occupies a conſiderable ſpace of ground in Apulia, to the excluſion of graſs, on account of the food which it adminiſters to their cattle[5].

26. Two larger, and two or three ſmaller ſpinous leaflets at the baſe of the calyx: ſcales ending in a ſpine. Receptacle villoſe. Pappus feathered. Flowers white; the Egyptian variety has purple flowers[1]. Native of Syria, Crete, and Spain. Annual. Cultivated in 1640[2].

27. Stem four or five feet high, angular, ſtriated, woolly, without thorns, much branched. Root-leaves one to two feet long, with diſtant pinnas and linear intervals; pinnas two-lobed unequal, alternately erect and ſpreading, the larger linear, the ſmaller lanceolate, very entire, but fringed with a few fine prickles; midrib ſtiff, extending out into a ſharp prickle; above green, with numerous ſhort ſtiff hairs preſſed cloſely; underneath with a thick, woolly, white down. The ſegments point alternately upwards and downwards. Stem-leaves embracing; but not at all decurrent; ſimilar to the root-leaves, but the lobes not regular, all lanceolate, the terminating one long. Peduncles ſlender, extremely cottony, tomentoſe. Heads very large, cluſtered, terminating the ſtem and branches. Scales of the calyx linear-lanceolate, terminated by a long, ſtiffiſh, yellow prickle, covered and interwoven with a thick woolly down. Floſcules purple, ſometimes white. Style much longer than the anthers. Stigma ſlightly bifid, anthers longer than the corolla. Seeds large, whitiſh, without ridges. Down ſhorter than the corolla, fringed with long hairs[4].

Native of Britain, France, Switzerland, Germany, Auſtria, Carniola, Spain, and Portugal. In dry paſtures, by road ſides, and in waſte places: flowering from july to ſeptember. Biennial.

The receptacle is pulpy and eſculent, like that of the Artichoke[5]. It is much the moſt ſpecious of all our Thiſtles.

28. Stature ten and twelve feet. Diameter of the ſtem in the lower part near two inches. It divides from the bottom into many ſtrong branches. Leaves alternate, pendulous, tomentoſe underneath. Heads large, ſcales of the calyx ending in a ſhort harmleſs point and cobwebbed. Corolla pale purple. Down plumoſe. It flowered in the Eſtham garden at the end of auguſt and beginning of ſeptember 1726, and the ſeeds came from Carolina[6].

It had probably been in the Oxford garden before, if it be the Carduus eriocephalus altiſſimus. *Cat.* 1658.

29. Stem ſlender, a foot or eighteen inches high. Leaves many (26. 28.): the lower three inches long and half an inch wide. Head rather oblong; ſcales ſharp. Corolla purple. Sent by Baniſter from Virginia[1].

30. Root perennial, creeping. Stem eighteen inches high or ſhorter. Leaves five to ten, not toothed, ciliate with very ſoft ſpines, quite white underneath with a very ſharp keel; ſome entire, others gaſhed. Very few however of the leaves are gaſhed, but by culture many of them become laciniate[2].

Stem erect, quite ſimple, ſtriated, tomentoſe. Leaves half-ſtem-claſping, ſerrate, the ſerratures ſpiny, the middle nerve white, alternate; the bottom ones petioled. Flower one, purple, terminal. Calyx ovate, ſcales acute ſomewhat ſpined[3].

According to Hudſon, the radical leaves are pinnatifid and toothed: lower ſtem-leaves pinnatifid; the middle ones toothed; the upper ones entire; all ſpinous-ciliate, tomentoſe beneath. Stems a little branching, bearing from one to ſix flowers. Hudſon affirms that he has ſeen both this and the *helenioides* from the ſame root. Haller alſo, Scopoli, Villars, and Withering make this a variety of the *helenioides*. See n. 40.

31. According to Linneus, this is very like the former, but double the height, and even as high as a man. Root ſcarcely creeping, all the leaves undivided, white underneath, but not, as in that, of a ſnowy whiteneſs. Stem grooved, the whole of it leafy, (forty to fifty). Leaves half-ſtem-claſping (with round, reflex, adnate ears,) toothed, not laciniate, ciliate with weak ſpines; floral leaves ſubulate.

Leaves lanceolate, entire and toothed[1]; or rather ſerrate than toothed; ſtem-leaves cordate at the baſe[2].

Radical leaves of a long elliptic form, petioled. Stem-leaves ſeven or eight inches long. Flower large, erect, purple, an inch and half long, and near two inches in diameter, terminating the ſtalk: one and ſometimes two more flowers grow below it on long peduncles from the axillas. Scales of the calyx lanceolate, erect, acute, but not pungent, and of a dull purple colour. Style much longer than the anther. Down plumoſe. A variety of this ſometimes occurs, having leaves near the top pinnatifid, as figured in *flor. dan. t.* 109[3].

Stem ſeldom above a foot high when wild; in gardens it is generally double that height, and the

[1] Dodart. [2] Hort. brew. [3] Curtis.
[1] Curtis. Lightfoot. Withering. Miller. Allioni.
[2] Symonds. [3] Linn. ſyſt. and Forſk. in Linn. ſyſt.
[4] Hort. kew. from Forſk.

[1] Woodv. Med. [2] Ray. [3] Dill. elth. [4] Mor. hiſt.
[1] Linn. ſpec. ſyſt. and forſ. [2] Lyons in Relhan. [3] Hudſon.
[1] Stokes in Withering. [2] Lightfoot.

leaves

leaves so much larger, that it seems a different plant. Leaves shining green on the upper side. The roots creep far under the surface. It has been cultivated in the gardens of some quacks, who pretended to cure madness with it. Hence probably the name of Melancholy Thistle*.

The former species is common in moist meadows and marshy places. This is found in mountainous pastures in Yorkshire, Westmoreland, Cumberland, and Wales. Mulbarton near Norwich. Acton in Gloucestershire. A meadow near Highgate. Hounslow-heath. Near Croydon. In Scotland. They are both perennial, and flower in july.

32. Differs from the foregoing, which it resembles very much, in having a stem less by half, scarcely grooved: leaves narrower, the floral ones lanceolate, not subulate†.

Stem solitary, from a foot and half to three feet in height, simple, one-flowered or divided into few elongated erect peduncles, striated, frequently flexuose, woolly as if covered with a cobweb, leafy to about half the height, the rest leafless, and of a dusky purple. Stem-leaves long lanceolate, half-stem-clasping, acuminate, erect, the upper surface green hairy and rough, the lower cobwebbed and paler, thickish, obscurely serrulate and ciliate with harmless spines: the lowest more obtuse and subdecurrent, the higher gradually less, till the uppermost become very small. Root-leaves similar, but narrowed towards the base. Calyx ovate; scales acute, somewhat lanuginous at bottom, glutinous, dark green, with a glandulous purple riding along them. Florets purple. Seeds pale and shining. Down plumose.

In a garden it acquires many stems, divided at top into five or six long peduncles, which are sometimes subdivided; the leaves also are much larger, more toothed; and the lower ones more decurrent‡.

Native of Siberia, Switzerland, Austria, Carniola, Piedmont, and Montpellier. Introduced 1765, by John Earl of Bute*.

33. Habit and height of the foregoing, of which it might be taken for a variety. But the leaves are twice as broad, more toothed, scarcely tomentose underneath. Heads fortified with three leaflets, seldom two, never one, as that is. Leaves pungent at the base. Calyx cylindric, not globular. Corolla white, not purple. This agrees with the former in having a plumose down, but especially in the radical leaves being pinnatifid. It resembles *Cnicus oleraceus* in these leaves; as also in the white keel to the scales of the calyx, and in having a fastigiate, not a convex disk: but the upper leaves are undivided, the flowers solitary and on long peduncles. Floral leaves small, not broad concave or pale*. Native of Siberia. Perennial.—Introduced 1775, by Jos. Nich. de Jacquin, M. D.†

34. This is a perennial plant, in habit much resembling the Carduus lanceolatus, but the stem is not winged (as in that species.) The stems are many from the same root; and are about a finger's breadth in thickness, or scarce so much; narrow, round, furnished with prominent lines, hirsute with horizontal white hairs. They are about five or six feet high, and branched on the upper part. The branches are compositе, alternate, ascending, and about a foot long; dividing at the top into three others or branchlets, which are short, and flexuose, but in other respects resemble those on the stem. The radical leaves of this plant are a foot and a half long, spreading in all directions, and furnished with either alternate or opposite laciniæ, of which the last or odd one is sinuate-toothed: the lateral ones gradually decrease in size as they approach the base, and are sinuate-bipartite: the less or divarications of these leaves are linear and alternating with two small rounded lobes with a purple channel towards the base. The stem-leaves are about a foot long, half-stem-clasping, horizontal, alternate; with divaricated linear-bipartite segments, of which the uppermost is the least. They are rough and green above; beneath downy and white; the margins and tips of the segments have straw-coloured subulate spines, formed from the continuations of the straw-coloured veins of the leaves. The flower is terminal, and solitary on the top of each branchlet. Calyx globose, and squarrose; the scales ending in a straight spine; corolla purple-red: seeds scarcely four-cornered, and of a pale purple. The seeds of this plant were received from Siberia by Mr. Marmé, in the year 1779‡. Introduced in 1787, by Chevalier Murray‡.

35. Stem eighteen inches high, upright, grooved, smooth, sparingly branched. Leaves alternately scattered, attenuated to the base, sometimes a little decurrent, unequally toothed, the teeth ending in a little evanescent bristle, slightly channelled and somewhat rigid. Flowers terminating, solitary. Calyx cylindric, oblong, broader at the base; scales linear, all pressed close, not patulous, yellow, ending in a weak spine. Corolla yellowish white. Seeds turbinate, four-cornered. Down plumose, very abundant‡.

Found in Spain by Loefling, and in Silesia by Krocker.

36. *Root* perennial. *Stem* usually single, two or three feet high, erect, round, hollow, a little villose, angular at bottom, striated at top; generally quite simple, but sometimes it puts forth short one-flowering branches from top, seldom from all the axils: sometimes, especially towards the top, it is covered with a white wool, and ends either in one flower, or a few collected into a head; seldom five, six or more, and in that case the lower are pedunculed. Radical *leaves* lanceolate, the base attenuated into the petiole and toothed; the others sessile or stem-clasping, not decurrent; pinnatifid more or less deeply gashed, divisions lanceolate or oblong, acuminate, ciliate-serrulate, harmless, the outmost larger: all subvillose, deeper green above, whitish underneath. Instead of leaves, the upper part of the stem has only a few very distant bractes, lanceolate and acuminate. Calyx ovate, somewhat glutinous but not villose; scales lanceolate-acuminate, harmless, the outer dark green, the inner dark purple and gradually longer. Corollules purple. Pappus somewhat feathered.—In moist meadows; beginning to flower the middle of may‡. See n. 42.

37. Stem one, erect, a foot and a half or two feet high, round, a little angular, tomentose, sometimes tinged with red, the size of a pen or rather larger. Radical leaves in a tuft. Stem-leaves alternate, petioled, near nine inches long and five broad, almost cut to the midrib, and subdivided, in the lower leaves, but those on the stem simply pinnatifid. Branches alternate, one-flowered. Scales of the calyx unarmed, spreading, and a little reflexed. Florets deep purple*. Calyx tomentose. Seeds four-cornered, attenuated to the base, wrinkled. The down consists of little, hairy, unequal, attenuated, white chaffs*. The whole plant smells strong of musk. It flowers in may and june‡.—About Montpellier; in Germany, Austria, Carniola; flowering in july and august.

38. Stem from one to three inches high. Leaves lying close to the ground, with one purple flower in the midst of them. Down long, plumose. Root-leaves spreading in a circle, on foot-stalks, pinnatifid, pinnas irregularly lobed and waved, angular, with sharp spines at the edge, green on both sides, hairy towards the base. Flowering heads one or more, rarely sessile; peduncles one to two inches high, hairy. Lower scales of the calyx short, oval-lanceolate; upper lanceolate, stiff, without spines. Segments of the corolla and antheræ equal. Style longer; stigma deeply bifid. Seed very small, with a simple down*.

* Miller fig. † Linn. ‡ Jacquin. § Hort. kew. ‖ Linn. spec. ** Hort. kew.

† Murray. ‡ Hort. kew. § Cavanilles. ‖ Jacquin. ** Pollich. †† Sternb. ‡‡ Jacquin. §§ Woodward Mss.

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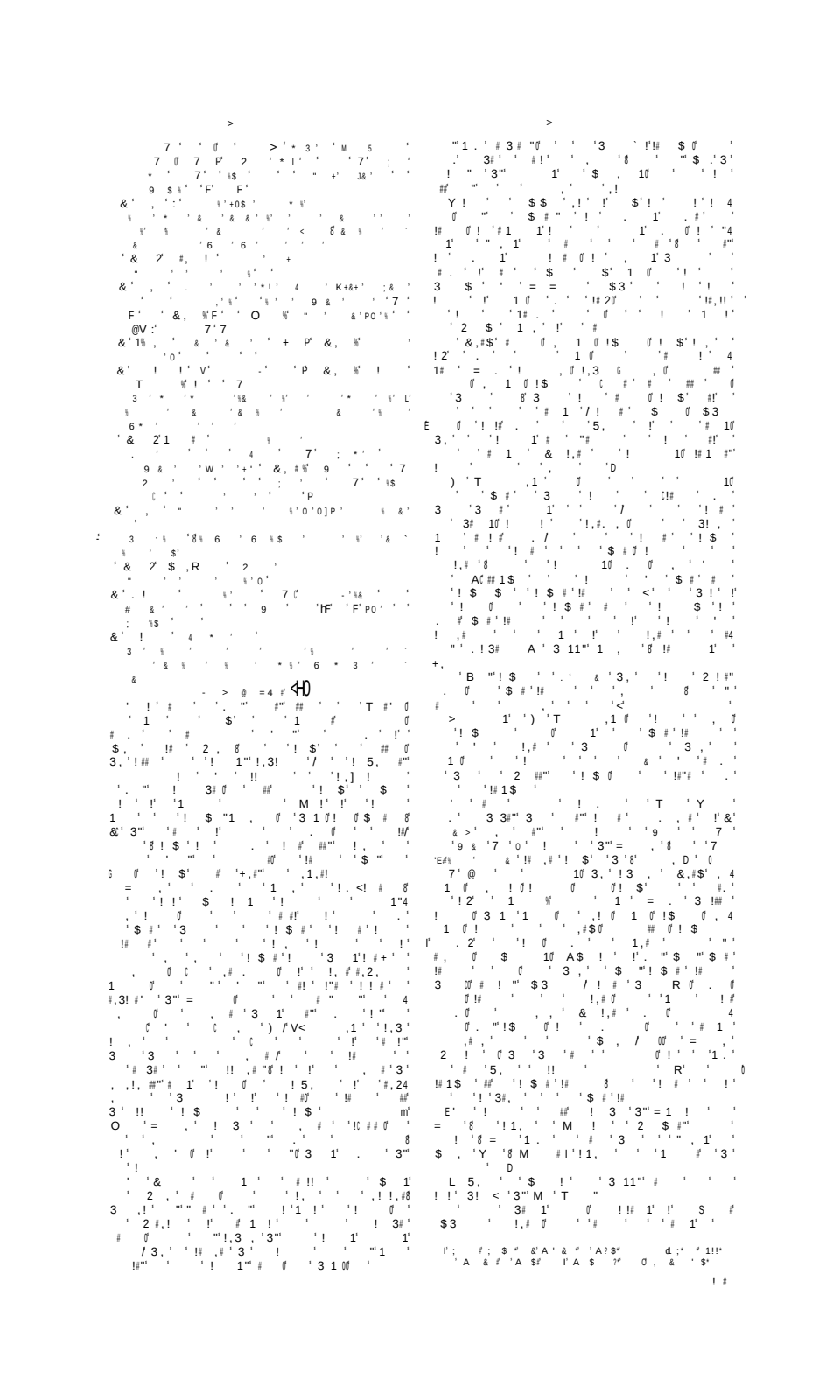

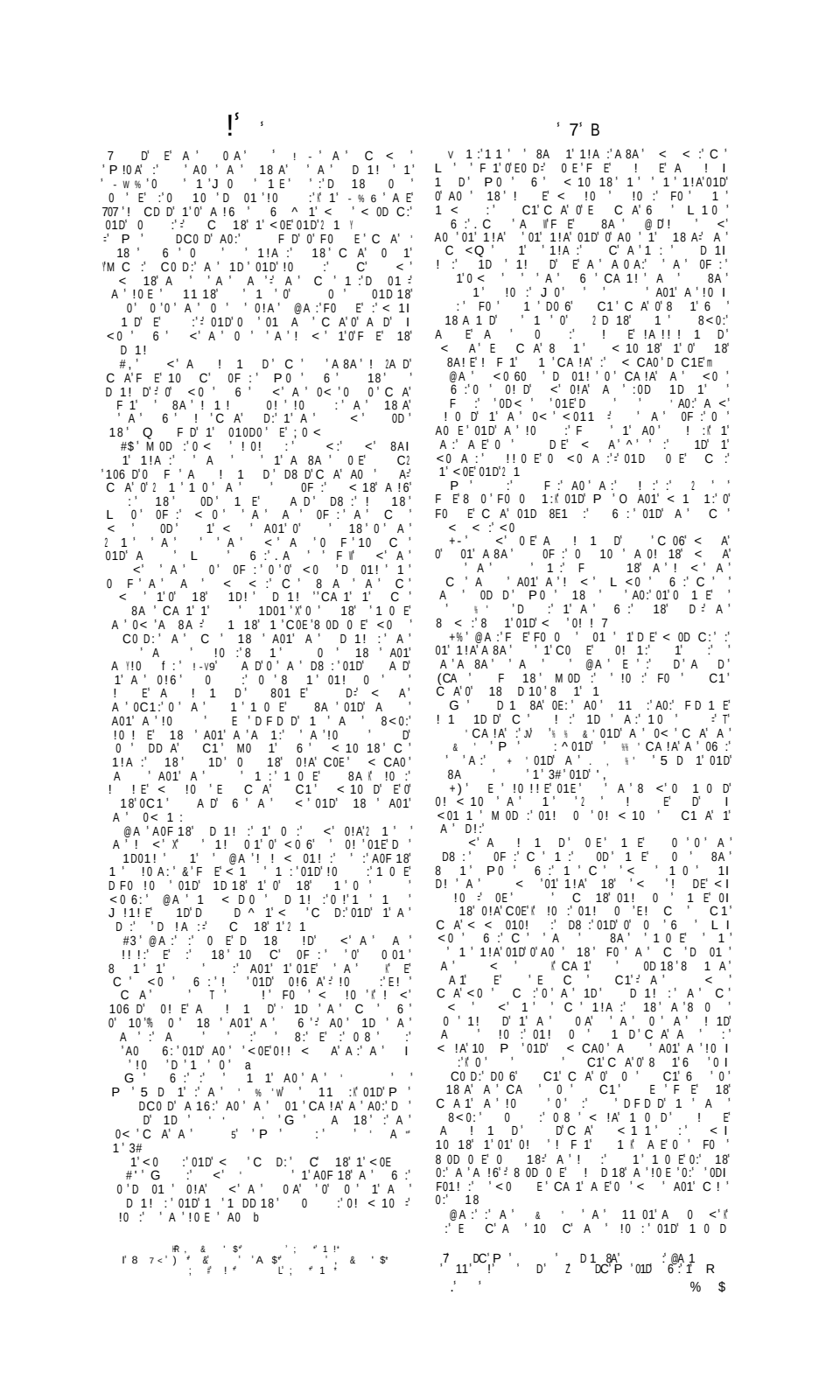

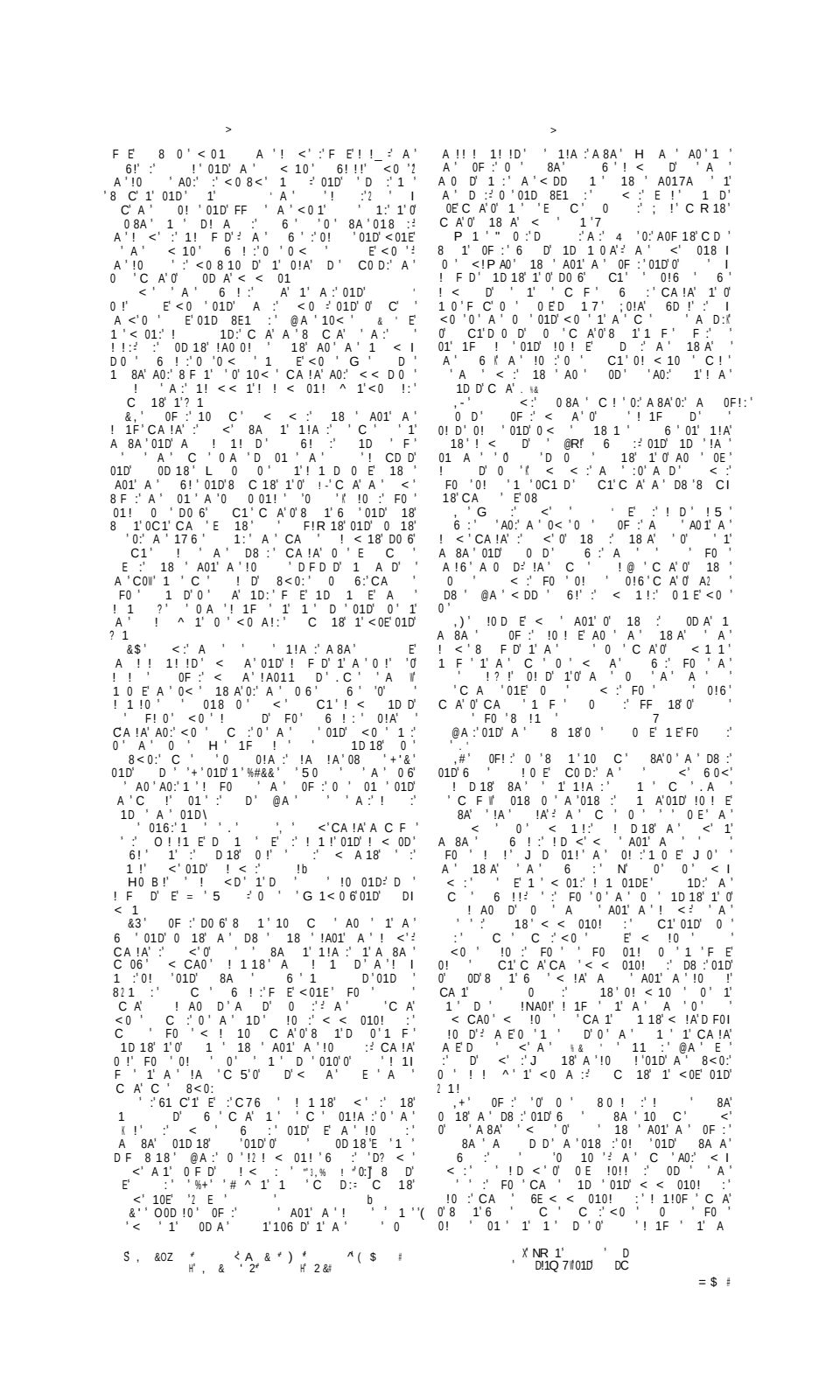

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acuminate. Styles long, trifid. Capſules few, turgid, roundiſh, ſmooth, ſtriated, growing black in autumn. Seed three-cornered, ſhining, acuminate.

Linneus either has not the plant, or confounds it with the *digitata*[a]. Leaves erect, ſometimes a line in breadth, but uſually narrower. Culms a long ſpan in height. Peduncles long, erect. No calycine glume but the bracte, in the female ſpikes, the upper of which ſtands as high as the male[b].

73. Culm ſheathed, ſix inches high. Leaves long, leſs than a line wide, nearly as long as the ſtem, rough. Male ſpike long, almoſt black, round, ſlender, glumes lanceolate, bay. Female ſpikes (two, three) the lower on a ſhort peduncle, the upper ſeſſile; each has a leaf at the baſe, which in the former is two inches long, in the latter leſs than an inch. When there are three, the upper is naked and with the barren ſpike. Glumes of the females black, obtuſe. Capſules pale. The ripe ſpikes therefore are variegated[b].

74. Culm leafy, a foot high and more, three-cornered, ſtriated, ſmooth. Leaves linear, ſtriated, dark green, ſhorter than the culm. Male ſpike one, oblong; glumes bay, obtuſe. Female ſpikes three, axillary; the leaf of the loweſt very long, nearly equal to the male: upper ſpike frequently androgynous[c].

75. A very diſtinct ſpecies. Radical leaves equal to the ſtem, a line and half or two lines broad, ſmooth with rough edges. Culm a foot high, three-cornered. Male ſpike one, long, cylindric, ſlender, pale bay and white. Female ſpikes two, (ſometimes four) crowded, each with a long leaf. Capſules ſlender, with very long points[m].

76. Leaves in tufts, firm, keeled, with a nerve ſtanding out, two lines broad, ſmooth, except the end of the nerve. Culms naked, from three to nine inches in height. Spikes very ſmall: male not more than four lines in length, bay; glumes ovate, obtuſe, with a white edge and yellow nerve. Upper female ſpike ſeſſile, an inch below the male, bay, few-flowered: glume ſheathing, ſtem-claſping, long, awned; lower with about ſix flowers, on a peduncle three inches long and more. Sometimes, but rarely, there are three female ſpikes[n].

Monſ. Villars refers, with a mark of doubt, to *C. filiformis* of Linneus, n. 27. and ſays, that n. 1386. of Haller approaches very near to this. He calls it *gynobaſis*, becauſe the female ſpike ſprings from the baſe of the ſtem.

77. Leaves ſhort, not above a line in breadth, rough. Culms four inches high, naked. Male ſpike obtuſe, broadiſh, half an inch long, dark bay. Female ſpikes (two, three) diſtant, ſhorter than the male, of the ſame colour, few-flowered. There is an androgynous ſpike ſometimes under the male[o].

78. Culm half a foot high, pale green. The loweſt leaf reaches the baſe of the male ſpike, which is an inch and four lines in length, with long narrow acuminate ſcales; under this the firſt female ſpike, pedicelled, and ſupported on a ſhort bracte; the ſecond is longer, and in place of a bracte has a leaflet of the ſame length; the third is longer than the ſecond, with a leaf longer than the ſpike; ſometimes there is a fourth. The ſcales of the male ſpike are ferruginous with a green line along the back; thoſe of the females are green with a ferruginous edge[p].

Radical leaves gloſſy, more than a line broad, rough. Culm not more than a foot high, leafy. Male ſpike ſlender, an inch long, bay; glumes obtuſe, bay, with a ſlender pale nerve. Female ſpike (two, three) leſs, more ſlender, half an inch long, on peduncles of the ſame length[q].

Scopoli thinks that his plant is the ſame with Haller's, though it be not alpine in Carniola as it is in the Griſons. Haller is of opinion that it is not different from his n. 1389. which is the *ſaxatilis* of Linneus.

[a] Scopoli. [b] Haller. [c] Ibid. [d] Allioni.
[m] Haller. [n] Ibid. [o] Ibid. [p] Scopoli.
[q] Haller.

Monſ. Villars has a ſpecies which he names *ſempervirens*, becauſe the leaves continue through the winter, till the new ones come up; the old leaves are completely bleached, and hence are called by the ſhepherds *Barbe de pere*. Neither the one nor the other are ever touched by the ſheep: and the plant is ſubject to the ſmut. He refers to Scopoli and Haller with a mark of doubt. It forms large tufts on high mountains expoſed to the north. The leaves are long, hard but flexible. From the centre of the tufts ariſe two or three hard ſlender culms from eight to ten inches in length, ending in three blackiſh ſpikes, the two lower of which are looſe, female, peduncled, and the upper male, more lengthened out: ſcales blackiſh brown with a green line on the back, the lower ending in an awn, the upper blunt. Capſule triangular, blackiſh, ſmooth, except ſome lateral aſperities near the upper part; ſeed triangular, gray, elongated. The male ſpike is blackiſh variegated with gray.

79. This has ſome affinity with *C. ruſſa* (C. acuta β. *Lin.* n. 1404. *Hall.*) but the leaves are ſmooth, a line broad and more, the edge rough. Culm naked, half a foot high and more. Male ſpike one, often fertile at the bottom, rather leſs than an inch in length. Glumes ſharply lanceolate, ſhining bay, with a green or yellowiſh nerve. Female ſpikes peduncled; the lower ones are ſo long as to hang down and have a leaf at the baſe[r].

Monſ. Villars ſays, that this differs little from his *ſempervirens*. The ſpikes are leſs brown, and the leaves do not form ſuch large tufts or haſſocks. The ſcales of the flowers are ruſſet-coloured, pointed and diſtinct.

80. Root-leaves narrowiſh, ſhorter than the culm, (except thoſe which embrace the baſe of it, which often equal and even ſurpaſs it) roughiſh along the edges and keel towards the top. Culm upright, a foot or more in height, three-ſided, with bluntiſh angles, ſmooth. Male ſpike one, (ſeldom two,) linear, half an inch long or more, (when there are two, the ſecond is a fifth ſhorter), terminating; ſcales brown with a green dorſal nerve, oblong, bluntiſh. Female ſpikes two, often three, commonly male at the baſe, ſomewhat crowded, but the lower ſometimes remotiſh, ovate (the upper ones ſomewhat conic), ſharpiſh; all commonly on ſhort peduncles; ſcales ovate, brown, with a thickiſh dorſal nerve ending in a point, finally only half the length of the capſule. At the baſe of the female ſpikes a leafy bracte, embracing with its ſheath the whole peduncle, which is very ſhort: the lower very long, and far ſurpaſſing the culm; the upper ones ſhorter; ſometimes the uppermoſt ſhorter than the culm. All at laſt reflex. Capſules ſmooth, ſpreading, ſubtrigonal, nerved, divided at the tip into two toothlets, with a very ſhort beak, if it may be ſo named. Three ſtigmas.

This plant has paſſed for a variety of *C. flava* (*n.* 21.), but the fructification proves it to be entirely diſtinct. In *C. extenſa* the leaves are narrower, and the whole plant more tall and ſlender: the ſcales of the female ſpikes are ovate and bluntiſh, with the nerve ending in a very ſhort projecting point, and are ſhorter in proportion to the capſule: the capſules are rather acuminate, but by no means beaked, and the ſummit is ſlightly biſid: the bracles are uſually reflex: the female ſpikes have their peduncles only the length of the ſheath, and not longer: the capſules alſo are ſpreading, but very rarely divaricate. The circumſtance of the ſpikes being cluſtered together is very conſtant in this, but by no means ſo in *C. flava*. This plant does not owe its height to being drawn up by the ſurrounding herbage, for it is always found in open places: as in the marſhy ground near Harwich, and on the weſt ſide of Braunton Burrows, in the north of Devonſhire, but not common. It flowers in june[s].

81. Leaves upright, narrow, rough along the edges and keel, ſhorter than the culm; which is

[r] Haller. [s] Goodenough.

upright, ſlender, about a foot in height, three-ſided, with the angles acute and rough. Male ſpike one, terminating, ſublinear, half an inch long or more, ſharpiſh; ſcales yelloviſh with a white border, oblong, blunt or bluntiſh. Female ſpikes moſt commonly two, uſually remote, ovate-oblong, acute, the lower on a longiſh peduncle, the upper ſubſeſſile; ſcales oblong, ſharp or ſharpiſh, almoſt equalling the capſule. At the baſe of each female ſpike a bracte or ſheathing leaf; the lower upright, almoſt equalling the culm, the ſheath embracing more than half the peduncle; the upper ſubdivaricate, uſually ſhorter than the culm, covering the whole or almoſt the whole of the peduncle, which is very ſhort. Capſules ſubtrigonal, ſtriated, oblong, acuminate-beaked, nearly equalling the ſcales, often exceeding them, divided at the tip, ſpreading but not divaricated or nodding. Three ſtigmas. It varies, but rarely, with three female ſpikes.

This plant is ſcarcely removed from *C. flava*. It differs however in having the angles of the culm ſharp and rough; the female ſpikes remote oblong and acute, not round, the lowermoſt ſupported by a long peduncle nearly half of which appears above the ſheath; the lowermoſt bracte erect, not divaricate; the capſules not divaricate but ſpreading, and ſlightly divided at top, and ſcarcely ever more than two female ſpikes.

Native of America, Newfoundland, *&c.* Found by the Rev. Mr. Williams, of Eaton near Shrewſbury at that place; flowering in june and july [1].

82. Root thick, creeping very much. Leaves very dark green and glaucous, rough on the edges and keel towards the tip, a little ſhorter than the culm; which is upright, often incurved, about four inches and a half high, three-ſided, the angles rough and very acute, thicker than any of its height, and ſtiff. Male ſpike one (ſeldom two) terminating, oblong, ſharpiſh, about three-quarters of an inch long; ſcales black, ovate, very blunt, with a membranaceous border and an abbreviated green dorſal nerve. Female ſpikes two or three, approximating to the male, oblong, ſharpiſh, ſeſſile (the lower ſomewhat remote and often peduncled), the length of the male, with the flowers cloſely imbricate, and one or two of them at the end male, eſpecially in the upper ſpikes; ſcales black, ovate, very blunt, *&c.* as in the male, finally ſhorter by half than the capſule. The female ſpikes have a ſeſſile leafy bracte, eared on each ſide at the baſe; that which ſubtends the lower ſpike is longer than the ſpike and recurved; thoſe which ſubtend the upper ones are upright, ſhorter than their reſpective ſpikes, and eared at the baſe. Capſule ovate, flattiſh on one ſide, ſmooth, blunt iſh; but ſometimes produced, ſharpiſh and ſomewhat recurved. Stigmas two, thickiſh, white, hairy. The lower flowers are often ſomewhat remote; the capſules with an undivided mouth and the ears of the bractes large and roundiſh.

This plant has often been confounded with the *ſaxatilis* of Linnæus, and the *montana* of Hudſon. It differs from the latter in having no ſheaths, two ſtigmas, and ſmooth capſules: from the former in being a thicker and much ſmaller plant: from both in the great rigidity of its leaves and incurved ſtalk. The firſt of theſe circumſtances, and their being ſpread abroad or bent back, diſtinguiſh this from *cæſpitoſa*, which has upright ſoft leaves. By the ſame marks it may be kept ſeparate from *C. ſtricta*, which alſo is altogether upright. But the fructification of theſe three ſpecies, eſpecially in the number of ſtigmas, is very ſimilar.

Obſerved on the top of Snowdon, and by Mr. Dickſon, on the ſummits of the higheſt mountains in Scotland [2].

83. The root creeps very much. Leaves glaucous, upright very ſtraight, ſhorter than the culm, rough along the edges and keel. Culm from a foot to two feet in height, and upwards, upright, three-ſided, with ſharp rough angles. Male ſpikes commonly two, three-ſided, from one to two inches in length; ſcales oblong, ſharpiſh, black, with a green dorſal nerve. Female ſpikes three, of the ſame length, the loweſt on a ſhort peduncle, the others ſeſſile, terminated by male flowers and acute; ſcales oblong acute, imbricate in eight rows, a little ſhorter than the capſules; theſe have a leafy ſeſſile upright bracte, the lower commonly a little ſhorter than the culm (ſometimes longer, and ſometimes much ſhorter), when young, having generally an ear which is quickly elongated and ſoon after vaniſhes; the upper ones ſhorter, and alſo eared. Capſule compreſſed, ovate, acute, ſmooth, undivided at the tip. Stigmas two, white, thickiſh, villoſe. The root-leaves, which embrace the baſe of the culm have a ſheath membranaceous on one ſide; as the culm advances the membrane burſts and is torn into a ſort of netted threads.

This plant has many particulars in common with *cæſpitoſa* (n. 38.); its upright culm and leaves, no ſheaths, ſeſſile ſpike, and ſo appearance digynous flowers: but beſides the ſplitting of the ſheath into threads like open net-work, the root-leaves and bractes in *C. ſtricta* are ſhorter than the culm at the time of flowering; the bractes, particularly the lowermoſt, have either no ears or oblong ones, which are preſently ſo elongated as to loſe their form; the female ſpikes are acute, owing to their having male flowers at the top; their ſcales are all acute; their capſules are ſet in eight rows; and two male ſpikes for the moſt part terminate the culm.

On the contrary, *C. cæſpitoſa* has the root-leaves, which embrace the baſe of the culm, with the membranous part always entire: the root-leaves equal the culm in length at the time of flowering, the bractes are longer: the bractes always have little round ears on each ſide of the baſe, which do not change their ſhape; the female ſpikes are obtuſe, and have no male flowers at their ſummit; the ſcales, though ſometimes they may be ſomewhat acute, are in general bluntiſh, not unfrequently very much ſo: the capſules are generally ſet in ſix, very rarely in eight rows. It is ſeldom found with more than one male ſpike. Beſides it is every way a much ſmaller, weaker and ſofter plant.

It grows in marſhes. Mr. Pitchford obſerved it near Norwich. It flowers in april [3].

84. Leaves dark green, ſlender, rough along the edges and keel, ſhorter than the culm; which is upright, from ſix to twelve inches high, three-ſided, with the angles bluntiſh and ſmooth. Male ſpike half an inch long or more, oblong, three-ſided, upright; ſcales membranaceous, ſomewhat ferruginous, oblong, acute, with a green dorſal nerve. Female ſpikes male at the baſe, ovate, on ſhort peduncles, upright, with the flowers rather cloſely imbricate; ſcales ovate, acute, nearly equalling the capſules. At the baſe of the peduncles, eſpecially the lower one, is a bracte or ſheathing leaf, ſhort, with a ſhort ſheath equalling the peduncle. This leaflet ſeldom or ever exceeds the culm. Capſule ovate, ſubtriquetrous, ſharpiſh, with the mouth undivided, tomentoſe, becoming flat. Stigmas three.

This plant is very eaſy to be diſtinguiſhed from the *pilulifera* and *ſaxatilis* of Hudſon, by its having the ſpikes ſhortly peduncled, and the peduncles encompaſſed by a ſheath equalling them in length. *Pilulifera* and *ſaxatilis* of Hudſon have no ſheaths: if theſe be attended to, it will ſoon be diſcovered that no one of the Britiſh ſpecies bears any reſemblance to this. *C. præcox* has a creeping root and an erect ſtalk, with angles ſomewhat ſharpiſh.

It is a very common plant, growing on moſt of our heaths and in meadows; flowering in april and may [4].

85. Stem upright, leafy, three-cornered, from a foot to eighteen inches high. Uppermoſt floral-leaf riſing to the height of a terminating ſpike. Male ſpike one-half to three-quarters of an inch in length, cloſely imbricated: ſcales numerous oval yelloviſh brown with a green keel and ſhining membranaceous

[1] Goodenough. [2] Ibid. [3] Ibid. [4] Ibid.

edges, which are wanting in *C. fylvatica*. Female ſpikes moſtly three axillary, on ſlender peduncles, the lowermoſt one inch long, that above it ſhorter, the uppermoſt ſeſſile: ſcales oval pointed pale brown with membranaceous edges, and much ſhorter than the capſules: which are only two or three on a ſpike, diſtant, green, nearly round, much bellying, larger than any of our Britiſh ſpecies, about the ſize of Hemp-ſeed, ſcored with numerous ribs, much reſembling thoſe of *C. fylvatica*, tapering to a cloven point, the ſegments not pointed, but ending in torn membranaceous margins. Stigmas three.

The paucity of the capſules, the ſhortneſs of the peduncle, and other marks clearly diſtinguiſh this from *fylvatica*, of which ſome botaniſts were inclined to conſider it as a variety, but without any other reaſon than its growing in woods, and the ſhape of the capſules being ſimilar [a].

The firſt of theſe circumſtances induced the late Dr. Solander to name this ſpecies *depauperata*, and he was followed by Dr. Withering.

Dr. Goodenough diſcovered it in Charlton-wood, and Mr. Dickſon in dry woods near Godalming in Surry. It has alſo been found by Mr. Sole, of Bath.

A plant of this ſize could ſcarcely have eſcaped ſo long unnoticed, had it not, from the form of the capſules, been taken for a ſtarved variety of *C. veſicaria* [b]. It flowers in may and june.

86. Leaves very long, two or three lines broad, the edges and nerve rough. Culm three-cornered, three feet high. Male ſpikes two; ſometimes a third half male: glumes bay, obtuſe, with a green nerve. Female ſpikes three to five, ſitting on leaves; the loweſt longeſt; when young black, but when ripe yellow and black [b].—Mr. Hudſon puts the ſynonyms of Haller and Ray to his *cæſpitoſa*, which is our *ſtricta*, n. 83.

87. Leaves half an inch broad, thick, ſtiff, very dark green, ſomewhat glaucous underneath; very rough along the edges and keel, ſhorter than the culm; which is from two or three to ſix feet in height, upright, firm, three-ſided, the angles ſharp at bottom but bluntiſh at top, altogether ſmooth, except at top where an internode or two is roughiſh. Male ſpike three-ſided, with the angles acute, ſubclavate, from two to four inches long, terminating; ſcales oblong, acute, brown, membranaceous, with a green dorſal line. Female ſpikes about ſix, cylindric, peduncled, from four to ſix inches long, pendulous, much ſhorter than the bracles, remote, with the lower flowers alſo remote, but the upper ones more cloſely imbricate; ſcales membranaceous, black, oblong, acute, with a broad green dorſal nerve. At the baſe of each peduncle is a bracte, or long ſheathing leaf, with the ſheath uſually the length of the peduncle. Capſule ovate, three-ſided, ſmooth, acute, with an undivided mouth, and longer than its ſcale. Stigmas three.

The great ſize of this Carex, and its very long pendulous cylindric ſpikes, diſcriminate it at a great diſtance. It has remarkably ſmall capſules for its ſize.

In woods and hedges not uncommon; flowering in may and june [c].

88. This differs from *C. fylvatica*, which it reſembles very much in having no apparent peduncles or very ſhort ones, and in the whole plant being greener. Leaves broad. Spikes ſix or ſeven, very ſlender and ſtrigoſe, long and green [d]. Male ſpike an inch or more in length, cloſely imbricated, with perfect ſeeds at the end: ſcales oblong-lanceolate, ſharp-pointed, as long again as the capſules, keel beſet with minute points towards the end, with a broad ſtreak along the back, ſcattered with long orange dots; edges broad and membranaceous. Fertile ſpikes axillary (four, five), very diſtant; the lower on very ſhort peduncles, the upper ſeſſile, two inches long and upwards: flowers thin, irregularly ſcattered: ſcales membranaceous, pale brown with a green keel. Capſules three-cornered, brownish green, acute but not acuminate as they are in *C. fylvatica*—hairleſs, not ſhining, half as long again as the calyx, rigid; ribs three to five on each of the ſides, whitiſh. Seed of the ſame ſhape and nearly filling the cavity. The ſtructure of the capſule points out its near affinity to *C. paniced* [e].—In woods and hedges, as in Witham and Noke woods, Oxfordſhire; flowering from april to june.

Allioni has a Carex (n. 2321.) which he names *frigoſa*, but it ſeems to be a ſpecies different from this. He gives no deſcription of it, but refers to Haller, n. 1388.

89. Root creeping, and throwing out from the joints. Leaves in tufts, yellowiſh green, a quarter of an inch wide, rough at the edges. Stems numerous, twelve to eighteen inches high, three-cornered, rough at the edges, leafy: in open ground only eight to ten inches high, bending with a curve, angles ſharp. Male ſpike terminating, about an inch long, ſlender; cloſely imbricate; three-cornered; yellowiſh-brown, ſhorter than the lower female ſpikes: ſcales lanceolate-oblong, bluntiſh, ſometimes with a ſhort ſharp point; ſometimes lanceolate, whitiſh and membranaceous on the ſide, moſtly with a tinge of cinnamon colour, and a pale green keel. Female ſpikes three to ſix, axillary, diſtant, when in ſeed pendulous, one to one inch and a half long, looſely imbricate: flowers alternate: ſcales oval-lanceolate, yellowiſh with a green keel. Capſules ſmooth, three-cornered with obſcure angles, and a beak nearly as long as the capſule, cloven. Style divided almoſt to the baſe into two, and ſometimes into three. Its pendant ſpikes, the elliptic bend of its ſtem, and the pale yellow green of its leaves, render it one of the moſt elegant ornaments of our woods [f]. It flowers in may and june.

Retzius is not willing to allow our *fylvatica* to be the *patula* of Scopoli: his deſcription however correſponds, though the figure does not; but that is execrable, as moſt of his figures are.

None of the figures indeed of this plant, except that of Leers, gives its due character. Thoſe of Parkinſon, Moriſon, and Flora Danica, repreſent it in its firſt ſtage of flowering when the ſpikes are erect. It does not long continue in this attitude; for the ſpikes, by reaſon of their thin and long peduncles, as ſoon as the impregnation of their flowers has taken place, are too heavy for their weak ſupporters. It uſually produces five or ſix female ſpikes, and one male, very rarely two.

Every one muſt be ſurpriſed at Linneus's joining this as a variety to *veſicaria* and *ampullacea* [g].

90. Culmis erect, three-cornered, with obſolete angles, which mark alone conſtantly diſtinguiſhes it from *cæſpitoſa*. Leaves and ſtem ſea-green. Male ſpike ſometimes one, but often two or three: ſcales ſimilar to thoſe of *C. cæſpitoſa*, but more looſely imbricate. Female ſpikes, the lower on long filiform peduncles, the upper ſhorter; but all pendulous when out of flower: ſcales oval, brown with a green keel, which is ſometimes lengthened beyond the capſule into a ſhort awn. Stigmas moſtly three. Capſules looſely imbricate, and not ſo blunt as thoſe of *C. cæſpitoſa*, green, ſlightly downy [h].

Meadows, woods, and heaths; flowering in may and june.

This ſpecies varies much in ſize and habit: but its cylindric pendulous black ſpikes, glaucous leaves, ſhort ſheaths, roundiſh capſules, ſmooth culm, and creeping root, are obvious diſtinctions.

Though common, it is little noticed by old authors. There is no old figure beſides Moriſon's. Leers's figure is tolerable; he ſeems to have joined *C. humoſa* (his var. a.) with *recurva* (his var. β.) [i].

Dr. Goodenough affirms, that it has invariably three ſtigmas, which does not agree with Mr. Woodward's obſervation given above: he adds, that they

[a] Woodw. Mſ. [b] Goodenough. [c] Haller. [d] Goodenough. [e] Ray.

[a] Woodw. Mſ. and Stokes in With. [b] Ibid. [c] Goodenough. [d] Woodw. Mſ. [e] Goodenough.

are

are thicker, longer, and more villoſe than in the generality of this family.

91. Culm a foot high. Leaves ſcarcely two lines broad. It has uſually one male ſpike, and ſometimes at the top of the upper female ſpike there are ſome male flowers. Under the loweſt is a leaf longer than the ſpike itſelf[k].

92. Native of Germany.

93. This is a ſpan high. Leaves longer than the culm, rugged about the edge. Culms three-ſided, ſmooth. Female ſpikes like thoſe of *C. Pſeudo-Cyperus*, but upright, remote, ſolitary, more ſlender, and under each a ſlender involucre ſcarcely attaining the length of the ſpike.

Native of China, whence it was ſent by Bladh[l].

94. Mr. Curtis has diſtinguiſhed ſpecifically three plants, which are looked upon by many only as varieties; he entitles them *riparia*, *acuta* and *gracilis*, but ſince his *acuta* is different from the *acuta* of Linneus, I have followed Dr. Goodenough in calling it *paludoſa*.

This accurate obſerver informs us that he was led to the idea of their being really diſtinct ſpecies, from remarking the pointed triangular black heads or male ſpikes of the firſt; the bluntneſs not only of the ſpikes themſelves, but of the ſcales compoſing the male ſpikes of the ſecond; and the narrow leaves, and ſlender appearance of the ſpikes in the third, joined to the want of that glaucous hue in the leaves, ſo conſpicuous in thoſe of the two former. He tranſplanted them into his garden, and found that they ſtill kept up the ſame appearances. The *riparia* is the largeſt and moſt common; when luxuriant, its ſpikes, eſpecially the lowermoſt of the female ones, frequently become branched: the capſules are large, ſomewhat inflated, pointed, and ſlightly bifid at the extremity.

The *riparia*, or great ſharp vernal Carex, as he calls it, is thus deſcribed by Mr. Lightfoot. Stalk triangular, very ſharply edged, varying from a foot to a yard in height. Leaves glaucous, half an inch wide, the edges and keel very ſharp and cutting if rubbed downwards: male ſpikes from three to five, the uppermoſt near two inches long, the others ſhorter, and placed a little below, about the baſe of it; ſcales narrow and lanceolate, dark brown: female ſpikes from three to five, commonly four; the upper one ſeſſile, with male flowers often at the top; the lowermoſt have ſhort peduncles and are two or three inches long, all erect, of a greeniſh brown colour, nearly cylindrical, or ſlightly ſwelling in the middle: the floral leaves are as high as the ſtalk: the ſcales are oval-lanceolate, with a long point or awn, brown with a greeniſh dorſal line: capſules triangular-conic, with a bifid point, ſmooth, ſtriated, cloſely ſet, of a dull greeniſh brown colour: the ſtyle triſid and brown.

It varies a little occaſionally as to the robuſtneſs of its ſtature, and is met with ſometimes with blunt male ſpikes[m].

It is common by the ſides of ditches, lakes and rivers, flowering in april and may.

In Italy the leaves are uſed by the glaſs-makers to bind their wine-flaſks; by the chair-makers to bottom-chairs; and by the coopers to place in the junctures in the heads of caſks, in the ſame manner as the leaves of the *Typha* are uſed in the ſame country, and the ſtalks of *Scirpus lacuſtris* in England[n].

95. The *paludoſa* or acute Carex of Mr. Curtis is next in ſize, at leaſt with reſpect to the breadth of of its leaves, to the *riparia*. They frequently grow together, and being greatly ſimilar in their foliage, may eaſily be confounded. When young, the bluntneſs of the male ſpikes, and obtuſeneſs of the ſcales without any awn, invariably diſtinguiſh this from the *riparia*; and though there be frequently a tendency in theſe ſpikes to be three-cornered, yet the angles are always very obtuſe; the colour of them alſo before the anthers come forth is much brighter, and ſometimes a ſpike is found perfectly brilliant: the female ſpikes as well as the males are fewer in number, and ſmaller; nor have they that tendency to be pendulous, which thoſe of the *riparia* frequently have; the capſules when ripe are alſo much ſmaller, more numerous, and no ways inflated, but very ſimilar to thoſe of the *gracilis*. While the ſcales in the male ſpikes before the anthers come forth are obtuſe, thoſe of the female ſpikes are pointed. In its weak ſtate, this plant approaches very near the *recurva*.

This plant, which is ſo common with us, does not appear to have been noticed by Linneus. It is often very variable in its appearance, but the ſcales of the male ſpike will afford a conſtant character; they are always more or leſs blunt in this ſpecies, and very acute in *riparia*. Its capſules are either not at all, or very ſlightly divided at the ſummit, but not beaked or forked.

In marſhes and by the ſides of ditches: flowering in may and june[o].

96. The *gracilis*, though a more ſlender plant in ſtalks, leaves, and ſpikes, is equal in height, when it grows in ſimilar ſituations, to the other two, but among the herbage it is ſhorter. The leaves are not only narrower, but have not the glaucous colour of the others. Its ſlender ſpikes are ſo pendulous in a young ſtate, as to give this plant the appearance of *C. pendula*. The female flowers are conſtantly digynous. The flowers come out a week or two later than the two others[p].

The ſlenderneſs of habit in this plant, its filiform ſpikes, pendulous when in flower (though upright when in fruit,) its having two ſtigmas, and the capſules ſtattiſh, and undivided at the ſummit, keep it evidently diſtinct from all others. It varies much in ſize, from three or four inches (in dry ſtarved land) to a foot, two feet and upwards[q].

Mr. Curtis, Dr. Stokes, Mr. Woodward, and others, long ago ſuſpected this to be the *C. acuta* of Linneus. It is now aſcertained beyond a doubt from the Linnean herbarium, that this is one of the varieties, being ſo named by Linneus himſelf. Dr. Goodenough therefore retains the Linnean name of *acuta* to this ſpecies; and thinks that the other variety may be his *ſtricta*.

97. Root creeping very much. Leaves glaucous, upright, narrow, longer than the culm, rough on a great part of the edges and keel. Culm from a foot to two feet in height, upright, three-ſided, the angles acute, rough towards the top, but commonly ſmooth beneath the lower ſpike. Spikes two or three male, and as many female. Males linear-filiform; the upper one commonly moderately bent, an inch and ſometimes two inches in length; the others ſhorter: ſcales oblong, ſharpiſh (but ſometimes blunt), yellowiſh with a green dorſal nerve and a tender white edge. Females cylindric, from an inch to two inches in length, upright, peduncled, the peduncles all ſhort, the lowermoſt longeſt: ſcales lanceolate, acute, yellowiſh with a green dorſal nerve and a pale edge, little more than half the length of the capſule, (ſometimes however equal to it, perhaps from diſeaſe). To every ſpike there is a leafy narrow upright bracte: the upper ones are ſhorter than the culm, one or two of the lower ones are much longer, and all are ſeſſile. Capſules cloſely imbricate in eight rows, yellowiſh, nerved, with the mouth two-toothed. Stigmas three. The root-leaves which inveſt the baſe of the culm with a ſheath membranaceous on one ſide, burſt into a ſort of network, as in *C. ſtricta*.

It grows in fens; flowering in may. Near London it is not common, it is to be met with however plentifully at Virginia water[r].

Probably ſeveral of the new ſpecies here enumerated may prove on farther examination to be either varieties or repetitions of old ones. Where I could not aſcertain this, I have left the ſpecies as I found them, on the credit of thoſe reſpectable

k Scopoli. l Retz. m Goodenough. n Lightfoot.

o Goodenough. p Curtis. q Goodenough. r Ibid.

authors who have eſtabliſhed them. When the truly learned Dr. Goodenough ſhall have ſettled the eſſential differences of the foreign, as well as he has done thoſe of our domeſtic ſpecies, and ſhall have diſentangled all the intricacies of the ſynonyms in both, we may hope for ſomething more ſatisfactory than we poſſeſs at preſent, on this very extenſive and difficult genus.

PROPAGATION, CULTURE, AND EXTIRPATION.

Theſe plants are never cultivated, except in botanic gardens, for the determination of the ſpecies. They may readily be propagated by the roots. Some few of them require a dry ſoil, and others a ſhady ſituation; but the greater part muſt be placed with water and bog plants, either by the ſide of ponds, or in pots or tubs filled with marſh or bog earth, and ſtanding in water. With theſe advantages ſome of them will ſcarely flower in a garden.

The Carexes or Sedges cannot be conſidered as uſeful plants, except in ſuch ſituations as will not produce better fodder and herbage; or where they contribute to fill up marſhes, and lay a foundation for their becoming hereafter dry land and uſeful meadows.

Wherever a meadow is capable of being drained, the Sedge may be deſtroyed; wet being neceſſary to the exiſtence of thoſe ſorts which over-run paſture grounds. I ſpeak from experience: for a meadow came into my hands, which had a bottom inclining to be peaty; it was entirely overgrown with great Sedge, and Flags (Iris pſeudacorus). I dug deep ditches and cut drains, which I kept carefully open, and dreſſed it well with coal-aſhes: the weeds entirely diſappeared, and it has now for many years been a good meadow. This general principle may be applied to many particular caſes, by ſuch as attend to the nature of ſoils, and the plants which they produce.

CAREX LITHOSPERMA. See *Scleria*.]

CARICA. (*From Caria, a kingdom of Aſia.*)
*Lin. gen. n.* 1127. *Reich.* 1232. *Schreb.* 1536.
Papaya. *Tourn.* 441. *Juſſ.* 399.
Claſſ. 22. 9. Dioecia Decandria: or rather Polygamia.
Nat. order of *Tricoccæ*. *Cucurbitaceæ* Juſſ.

GENERIC CHARACTER.

* *Male.*

CAL. ſcarce manifeſt: it has however five very ſhort ſharp teeth.

COR. monopetalous, funnel-form. *Tube* ſlender, very long, gradually ſlenderer downwards. *Border* five-parted, diviſions lanceolate-linear; obtuſe, obliquely and ſpirally revolute.

STAM. *Filaments* ten, in the top of the tube of the corolla; the five alternate ones inferior. *Anthers* oblong, fixed to the filaments on the inner ſide.

* *Female*, or rather *Hermaphrodite*.

CAL. *Perianth* very ſmall, five-toothed, permanent: teeth ovate acute ſpreading.

COR. five-parted; *parts* lanceolate ſharp erect below the middle, but reflected and twiſted above.

STAM. *Filaments* ten; five alternate ſhorter ſubulate, all united by a membrane at the baſe. *Anthers* ovate, erect, two-valved, fertile.

GERM ovate. *Style* none. *Stigmas* three or five, broad, flat-expanding, multifid: ſegments very ſhort, blunt.

PER. *Berry* very large, angulated with three or five furrows, unilocular, fleſhy.

SEEDS numerous, ovate, green, very ſmooth, tunicated, neſtling in the middle of the berry.

ESSENTIAL CHARACTER.

MALE. *Cal.* very ſmall, five-toothed. *Cor.* five-parted, funnel-form. *Filaments* in the tube of the corolla, alternately ſhorter.

HERM. *Cal.* five-toothed. *Cor.* five-parted. *Stigmas* five. *Berry* one-celled, many-ſeeded.

SPECIES.

1. Carica Papaya. *Common Papaw Tree.*
*Lin. ſpec.* 1466. *Juſſ.* 891. *Retch.* 4. 267. *hort. cliff.* 461. *Swartz obſ.* 378. *Laur. cochinch.* 628. *Rumph. amb.* 1. *t.* 50, 51. *Burm. zeyl.* 184. *Treco. ebret. t.* 7. *Hoyb. bark.* 181. *t.* 14, 15. *Brown. jam.* 360. *Mer. ſurin. t.* 40. & *t.* 62. 64. *Bont. jav. l.* 6. *c.* 6. *p.* 96. *Pluk. alm. t.* 278. *f.* 1. *Raii hiſt.* 1370. 2. *Ger. emac.* 1609. *f.* 2.
Papaya-maram. *Rheed. mal.* 1. 23. *t.* 15. *f.* 2.
2. Ambapaya. *Rheed. t.* 15. *f.* 1. *Raii hiſt.* 1370. *f. Park.* 1649. *Ger. emac.* 1609. 1.
Papaya. *Ebret. t.* 3. *f.* 1.
*Lobes of the leaves ſinuated.*
2. Carica Poſopoſa. *Dwarf Papaw Tree.*
*Lin. ſpec.* 1466. *Reich.* 4. 268. *hort. cliff.* 462. *Brown. jam.* 360. *Feut. peruv.* 2. 52. *t.* 39. *f.* 1. *Pluk. alm. t.* 278. *f.* 2? *Pet. gaz. t.* 43. *f.* 2?
*Lobes of the leaves entire.*

DESCRIPTIONS, &c.

1. The Papaw-tree riſes with a thick, ſoft, herbaceous ſtem, to the height of eighteen or twenty feet, naked till within two or three feet of the top, and having marks of the fallen leaves great part of its length; the leaves come out on every ſide the ſtem upon very long foot-ſtalks; thoſe which are ſituated undermoſt are almoſt horizontal, but thoſe on the top are erect: theſe leaves (in full grown plants) are very large, and divided into many parts (or lobes) which are deeply ſinuated, or cut into irregular diviſions. The whole plant abounds with a milky acrid juice, which is eſteemed good for the ringworm: the ſtem of the plant, and alſo the foot-ſtalks of the leaves, are hollow in the middle. The flowers of the male are produced from between the leaves on the upper part of the plant, on every ſide; they have peduncles near two feet long, at the ends of which the flowers ſtand in looſe cluſters, each having a ſeparate ſhort pedicel; theſe are of a pure white, and have an agreeable odour. Sometimes theſe are ſucceeded by ſmall fruit, about the ſize and ſhape of a Catherine Pear, which has occaſioned ſome to ſuppoſe it was a diſtinct ſpecies; but I have frequently raiſed this, and the female or fruitful ſort, from the ſame ſeeds, and in general the male flowers fall away, without any fruit ſucceeding them. The flowers of the female Papaw alſo come out between the leaves, toward the upper part of the plant, upon very ſhort peduncles, ſingly, ſitting cloſe to the ſtem; they are large and bell-ſhaped, compoſed of ſix petals, which are commonly yellow, but thoſe of the pyramidal ſort are purple: when theſe fall away, the germ ſwells to a large fleſhy fruit, the ſize of a ſmall Melon, but of different forms; ſome are angular, and compreſſed at both ends, others are oval and globular, and ſome pyramidal; the fruit alſo abounds with the ſame acrid milky juice as the plants. This fruit, when ripe, is by the inhabitants of the Caribbee Iſlands eaten with pepper and ſugar as Melons, but is much inferior to our moſt common Melon in flavour, in its native country; thoſe which have ripened in England were deteſtable: the only uſe I have known made of this fruit, was, when they were about half grown, to ſoak them in ſalt water, to get out the milky juice, and pickle them for Mangos, for which they have been a good ſubſtitute.

[Long (802) informs us, that the flowers, buds, and tender foot-ſtalks of the female tree are preſerved as a ſweetmeat, and the long Mango Papaw or fruit as a pickle, which is little inferior to the Eaſt-India Mango. The rounder fruit when ripe is boiled, and eaten with any kind of fleſh meat, and is looked upon as perfectly wholeſome; but eaten raw, it contains an acrid juice, very injurious to the inteſtines. The negroes ſuppoſe that Papaw-trees conduce to render the air healthy, and therefore plant them near their houſes. The bloſſoms are extremely odoriferous, and the trunks ſo ſucculent, and their growth ſo quick, that they may poſſibly aſſiſt to drain the ſoil, where they are planted, of ſuperfluous moiſture.]

Theſe plants are ſuppoſed to be natives of America, from whence they were carried to the Philippine Iſlands, and to ſeveral parts of India, where they

they are now pretty common. Though they have been ſuppoſed to have male flowers only in ſome plants, and female on the other, yet I have often ſeen ſmall fruit on the male, and have frequently had fruit on the female, whoſe ſeeds have grown as well as any I ever ſowed, though no male plants were in the ſame ſtove with them.

[Ray conjectured this tree to be ſometimes androgynous, in order to account for what Marcgraaf affirmed, namely that the male trees occaſionally bore fruit, and that the female trees bore fruit without having any male tree in the vicinity. The experience of the induſtrious Miller, and the obſervations of modern botaniſts, confirm the conjecture of the ſagacious Ray.

This tree is a native of both Indies; and was cultivated in 1690 in the royal garden at Hampton Court*.]

There are ſeveral varieties of this ſort, which differ in the ſize and ſhape of their fruit. Plumier mentions three of the female or fruitful Papaw, beſide the male, one of which he titles Melon-ſhaped, and the other ſhaped like the fruit of the Gourd; and I have ſeen another variety in England, with a large, ſmooth, pyramidal fruit; but theſe are ſuppoſed to be accidental varieties, which ariſe from the ſame ſeeds.

2. The ſecond ſort was found growing in a garden at Lima, by father Feuillee, and it was the only plant he ſaw of that ſort in his travels.

[Browne ſays, that it is frequent in ſome parts of Jamaica, and that it ſeldom riſes above four or five feet in height.]

This differs from the other, in having a branching ſtalk, the lobes or diviſions of the leaves being entire, and the fruit being ſhaped like a Pear. Feuillée ſays that the fruits were of different ſizes; that which he deſigned was about eight inches long, and three and a half thick, yellow within and without, and of a ſweet flavour; the flower of a roſe-colour, and divided but into five parts.

PROPAGATION AND CULTURE.

Theſe plants being natives of hot countries, will not thrive in England, unleſs they are preſerved in a warm ſtove; where there are ſuch conveniencies, of a proper height to contain the plants, they deſerve a place as well as almoſt any of the plants which are cultivated for ornament; for when they are grown to a large ſize, they make a noble appearance with their ſtrong upright ſtems, which are garniſhed on every ſide near the top with large ſhining leaves, ſpreading out near three feet all round the ſtems: the flowers of the male ſort come out in cluſters on every ſide: and the fruit of the female growing round the ſtalks between the leaves, being ſo different from any thing of European production, may intitle them to the care of the curious.

They are eaſily propagated by ſeeds, which are annually brought in plenty from the Weſt-Indies. Theſe ſhould be ſown in a hot-bed early in the ſpring, that the plants may obtain ſtrength before the autumn: when the plants are near two inches high, they ſhould be each tranſplanted into a ſeparate ſmall pot filled with a light, gentle, loamy ſoil, and plunged into a hot-bed of tanners bark, carefully ſhading them from the ſun till they have taken root; after which they muſt be treated in the ſame manner as other tender plants from the ſame country; but as theſe plants have ſoft herbaceous ſtalks, and abound with a milky juice, they muſt not have too much water, for they are frequently killed with moiſture. There ſhould alſo be great care taken when theſe plants are ſhifted from ſmall pots into larger, to preſerve the whole ball of earth to their roots; for whenever they are left bare, they rarely ſurvive it. As the plants advance in their growth, they will require larger pots, and when they are too tall to remain under frames, they muſt be placed in the tan-bed of the bark-ſtove, where they ſhould conſtantly remain, being careful not to give them much water, eſpecially during the winter ſeaſon; and in ſummer their waterings ſhould be often repeated, but given in ſmall quantities. With this management I have raiſed plants near twenty feet high in three years, which have produced their flowers and fruit in great perfection.

[In the Weſt-Indies this tree is propagated with great facility by layers as well as ſeeds.

CARICA. See *Ficus*.

CARIM-CURINI. See *Juſticia*.

CARIMGOLA. See *Pontederia*.

CARIMPANA. See *Boraſſus*.

CARIM-TUMBA. See *Nepeta*.

CARIOPHYLLASTER. See *Dodonæa*.]

[CARISSA.

*Lin. gen. Reich. n.* 318. *Schreb.* 413. *Juſſ.* 149. Claſſ. 5. *t.* Pentandria Monogynia.

Nat. order of *Contortæ*. *Apocineæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* very ſmall, five-parted, acute, permanent.

COR. monopetalous, funnel-form. *Tube* cylindrical, bellying at the mouth, longer than the border. *Border* five-parted, flat, diviſions oblong.

STAM. *Filaments* five, very ſhort, in the top of the tube. *Anthers* oblong, within the mouth.

PIST. *Germ* roundiſh. *Style* filiform, length of the ſtamens; *ſtigma* rather ſimple.

PER. *Berries* two, oblong, bilocular—according to Rumphius.

SEEDS ſeven, or eight, oval, compreſſed.

ESSENTIAL CHARACTER.

*Cor.* contorted. *Berries* two, many-ſeeded.

SPECIES.

1. Cariſſa Carandas.

*Lin. ſyſt.* 251. *Reich.* 589. *mant.* 52. *Lour. cochinch.* 124. *Burm. ind.* 69. (Echites). *Rumph. amb.* 7. 58. *t.* 25. *Pluk. alm. t.* 305. *f.* 4. (but the corolla not quadrifid.)

*Leaves elliptic obtuſe.*

2. Cariſſa ſpinarum.

*Lin. ſyſt.* 251. *Reich.* 590. *mant.* 559. *Thunb. jap.* 108. *Rumph. amb.* 7. 39. *t.* 19. *Kæmpf. amæn.* 5. 784.

Strigmarota Jangomas. *Lour. cochinch.* 634.

*Leaves ovate acute.*

DESCRIPTIONS, *&c.*

1. A tree with dichotomous branches. Leaves oppoſite, petioled, obtuſe, gloſſy, quite entire. Spines axillary, but not from all the axillas, oppoſite, ſhorter than the leaves, ſpreading. Peduncles ſubterminal, twin, three-flowered on equal pedicels. Flowers like thoſe of Jaſmine. Native of the Eaſt-Indies*.

Loureiro thus deſcribes it as he found it wild upon the eaſtern coaſt of Africa. It is a ſmall tree about ſix feet in height, with twiſted dichotomous ſpreading branches, armed with large ſtraight oppoſite prickles, branched and dichotomous at the tip. Leaves ovate, ſharp at the end, quite entire, ſmooth, oppoſite, ſubpetioled. Flowers white, of the ſame ſhape and ſize with *Jaſminum grandiflorum*. Calyx inferior, five-parted; the parts ſubulate and upright. Corolla ſalver-ſhaped, the tube long ſtraight and equal; the border five-parted with ovate ſegments. Filaments very ſhort, placed on the middle of the tube: anthers linear. Germ ovate: ſtyle filiform ſhort: ſtigma oblong, emarginate, upright. Berry ſimple, ovate, ſmooth, one-celled, containing many ſuborbiculate, imbricate ſeeds. The flowers are terminating, on few-flowered pedunceles. The berry when ripe is black; it is eatable and of a ſweet acid flavour.

Linnæus's deſcription is probably not very accurate, and therefore the Eaſt Indian and African plants may probably be the ſame; although the latter has only a ſingle berry, a ſalver-ſhaped corolla not contorted, an emarginate ſtigma, prickles branched not ſimply dichotomous, and the leaves acute.

2. A tree, with branches firſt trichotomous, then dichotomous, horizontal. Spines two at each rami-

* Hort. kew.

* Linn. mant.

fication, oppoſite, one above and the other below the branch, very ſpreading, an inch in length, ſtout, round, red and ſhining at the end, as in the firſt ſpecies. Leaves oppoſite, ſubſeſſile, coriaceous, quite entire, gloſſy; one pair at each dichotomy, and another intermediate pair. Peduncles terminal, very ſhort; with five or ſix ſmall flowers. Calyx ſemiquinquefid, with the teeth ſubulate. Corolla ſalver-form; tube ſwelling a little in the middle; diviſions of the border linear, emarginate, a little ſhorter than the tube. Stamens in the middle of the tube; filaments ſcarcely any; anthers linear, ſhort. Germ ſuperior; ſtyle ſhort, clubbed; ſtigma narrower, pubeſcent. Native of the Eaſt-Indies, and Japon*.

This being a dioecous plant, and differing totally in the generic character, Loureiro has conſtituted a new genus for this and another ſpecies, under the name of STIGMAROTA, from the ſhape of the ſtigma, radiated like a wheel.

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* bell-ſhaped ſpreading, four or five-parted: ſegments acute.

COR. none.

STAM. *Filaments* about thirty, longer than the calyx. *Anthers* roundiſh.

* *Female.*

CAL. *Perianth* wheel-ſhaped, five or ſix-parted: ſegments acute.

COR. none. *Nectary* lens-ſhaped, five or ſix-lobed.

PIST. *Germ* ſuperior, roundiſh. *Style* cylindric, ſhort. *Stigma* orbiculate, large, ſix-parted.

PER. *Berry* ſubglobular, fleſhy, one-celled, ſix-ſeeded.

SEEDS ovate, compreſſed, minute.

ESSENTIAL CHARACTER.

MALE. *Cal.* four or five-parted. *Cor.* none. *Stam.* thirty.

FEM. *Cal.* five or ſix-parted. *Cor.* none. *Stigma* wheel-ſhaped, ſix-cleft. *Berry* fleſhy, ſix-ſeeded.

SPECIES.

1. Stigmarota Jangomas.
Jangomas. *Garc. aromat. l. 2. c. 5. Bont. jav. l. 6. c. 25. f. 111.*
Spina ſpinarum. *Rumph. amb. t. 19. f. 1, 2.*
*Stem arboreous prickly; peduncles many-flowered ſcattered.*

2. Stigmarata africana.
*Laur. cochinch. 634. 2.*
*Stem ſhrubby prickly: flowers ſolitary terminating.*

DESCRIPTIONS.

1. A middle-ſized tree, with ſpreading branches. The prickles on the ſtem of the male are long and branched: on the female tree, ſhort ſimple ſcattered and few. Leaves ovate, acuminate, ſerrate, incurved, ſhining, ſmall, ſcattered, petioled. The flowers on both on many-flowered ſcattered peduncles. Berry brown-purple, eight lines in diameter, eſculent, ſapid, ſweet with a ſlight aſtringency.—Native of Cochinchina, and cultivated there.—Linneus's deſcription given above does not agree with Rumphius's.

2. Stem ſhrubby, in tufts, ſpreading, woody, ſix feet high. Leaves ovate, crenate, ſmooth, alternate, petioled. Prickles ſimple, long, ſtraight. Flowers terminating, ſolitary. The female flowers have ſix or ſeven biſid, ſeſſile ſtigmas, placed in a ring.]

CARLINA. *(From Carolus. Charlemagne's army being ſaid to be cured of the plague by the uſe of the root.)*

Engl. *Carline Thiſtle.* Fr. *Carline.*
*Linn. gen. n. 929. Reich. 1008. Schreb. 1258. Gaertn. t. 163. Tourn. 285. Vaill. A. G. 1718. Juſſ. 172.*

Claſs. 19. 1. Syngeneſia Polygamia Æqualis.

Nat. order of Compound Flowers: diviſion of *Capitatæ. Cinarocephalæ* Juſſ.

GENERIC CHARACTER.

CAL. *Common* ventricoſe, radiated, imbricated: *ſcales* numerous, looſe, acute, of which the interior ones are diſpoſed in a circle, very long, expanding, gloſſy, coloured, radiating the compound flower.

COR. *Compound*, uniform, tubular. *Corollets* hermaphrodite, equal; the proper one monopetalous, funnel-form; *tube* ſlender; *border* five-cleft.

STAM. *Filaments* five, capillary, very ſhort. *Anthers* cylindric, tubular.

PIST. *Germ* ſhort. *Style* ſiliform, length of the ſtamens. *Stigma* oblong, biſid or entire.

PER. none. *Calyx* remaining unchanged.

SEEDS ſolitary, ſomewhat rounded. *Down* plumoſe, branched, ſeſſile.

REC. flat; *chaffs* tercate, cleft.

ESSENTIAL CHARACTER.

*Cal.* radiated with long, coloured, marginal ſcales.

SPECIES.

1. Carlina acaulis. *Low Carline Thiſtle.*
*Lin. ſpec. 1160. Reich. 3. 693. upſ. 252. mat. med. 181. Sauv. monſp. 293. Gouan. hort. monſp. 426. Hall. helv. n. 183. Scop. carn. n. 1014. Allion. pedem. n. 567. Krock. ſileſ. n. 1352. Blackw. t. 532. Baub. pin. 380. 1. Raii biſt. 288. 1. Ger. emac. 1157. f. 2. Park. 968. 2. & 1685. Baub. biſt. 3. 64.*
C. Chamæleon. *Villars dauph. 3. 31.*
Chamæleon albus. *Cluſ. biſt. 2. 155. Camer. epit. 428.*
β. C. prior. *Dod. purg. 439. Hall. β. caulifera.*
C. cauleſcens. *Bauh. pin. 380* Chamæleon niger. *Matth. 492. Camer. epit. 430.*
*Stem one-flowered, ſhorter than the flower.*

2. Carlina lanata. *Woolly Carline-Thiſtle.*
*Lin. ſpec. 1160. ſyſt. 728. Reich. 3. 693. Ger. prov. 183. 2. Gouan. hort. monſp. 426. illuſtr. 64. Garid. aix. 82. t. 21. Barr. ic. 483. Col. ecphr. 1. 29. t. 27. f. 2.*
*Stem biſid, calyxes blood-red terminal, the firſt axillary ſeſſile.*

3. Carlina corymboſa. *Corymbed Carline-Thiſtle.*
*Lin. ſpec. 1160. Reich. 3. 694. mant. 462. Villars dauph. 3. 33. Gouan. illuſtr. 64. Col. ecphr. 1. 20. t. 27. f. 1.*
*Stem many-flowered ſubdivided, flowers ſeſſile, ray of the calyxes yellow.*

4. Carlina vulgaris. *Common Carline-Thiſtle.*
*Lin. ſpec. 1161. Reich. 3. 694. hort. cliff. 395. 2. fl. ſuec. n. 725. Gaertn. fruct. 2. 384. Hudſ. angl. 355. Wilb. 880. Hall. helv. n. 182. Pollich pal. n. 773. Leers herb. n. 622. Krock. ſileſ. n. 1353. Villars dauph. 3. 33. Gouan. illuſtr. 64. Beſl. eyſt. aeſt. 11. t. 8. f. 3. Cluſ. biſt. 2. 156. f. 2. Fuchſ. biſt. 121. Matth. 669. Dod. 739. 2. Lob. ic. 2. 20. 2. Trag. 859. Ger. 997. 1. emac. 1159. 1. Park. 981. Bauh. biſt. 3. 81. 2. Raii biſt. 288. 2. ſyn. 175. Mor. biſt. 3. 162. n. 5.*
C. corymboſa. *Scop. carn. n. 1015.*
*Stem many-flowered corymbed, flowers terminal, ray of the calyxes white [or yellowiſh.]*

5. Carlina racemoſa. *Racemed Carline Thiſtle.*
*Lin. ſpec. 1161. Reich. 3. 695. Gouan. hort. monſp. 426. illuſtr. 64. Cluſ. biſt. 2. 157. f. 1.*
*Flowers ſeſſile lateral very few.*

[6. Carlina pyrenaica. *Pyrenean Carline Thiſtle.*
*Lin. ſpec. 1161. ſyſt. 729. Reich. 3. 695.*
*Stem many-flowered, leaves decurrent runcinated.*

7. Carlina xeranthemoides.
*Lin. ſyſt. 729. ſuppl. 349.*
*Shrubby, branching, tomentoſe, leaves linear-ſubulate, ſerratures ſpineſcent, panicle terminal, ray yellow.*

8. Carlina atractyloides.
*Lin. ſpec. 1161. ſyſt. 729. Reich. 3. 695. amæn. 6. afr. n. 46. Fluk. alm. t. 273. f. 4.* (bad).
*Stem branching, calyxes with ciliate ſpines.*

9. Carlina acanthifolia.
*Allion. pedem. n. 571. t. 51. Villars dauph. 3. 30.*
Chamæleon albus. *Matth. Lugd. 1453.* (not the figure). *Bauh. biſt. 2. 67?*
*Stemleſs, leaves ſinuate-pinnatifid tomentoſe; diviſions half-two-lobed pungent.*

* Linn. mant.

DESCRIPTIONS, &c.

1. Root an inch thick, black, woody, having an acrid penetrating ſmell, and a bitter aromatic taſte. Cloſe to the ground is a circle of pinnated ſmooth leaves; the pinnæ angular, lobed, plaited; the angles ending in ſtrong ſpines. Stem (or rather peduncle) leafy, though ſcarce exceeding an inch and half in height. Flower uſually one, but ſometimes more, three inches in diameter when expanded, for it cloſes during the night and in rainy weather: rays white ſhining; floſcules greeniſh yellow, with purple toothlets [a]. Scopoli obſerves that the briſtles which proceed from the receptacle, are club-ſhaped at the end like the antenna of a butterfly.

Native of Switzerland, Germany, Carniola, Italy, South of France. Perennial. Cultivated here in 1640.

β. It is ſometimes found with a ſtem twelve or even eighteen inches in height. This, Linnæus ſays, is the caſe only when kept in a pot; but in open ſituations it has little or no ſtem [b]. Thus, however, neither of the ſpecific characters are conſtant.

The receptacle, and upper part of the root when tender, are eaten: but the root of the adult plant becomes acrimonious, and is recommended as an alexipharmic. It contains an acrid reſinous principle, by which it ſtimulates the ſolids, diſſolves the humours, and promotes perſpiration. The doſe of the root when dry, is from one to two drams; when freſh, from two drams to half an ounce, but it is more frequently given in a decoction than in ſubſtance [c].

2. This is three times as large as *C. vulgaris*. Simple branches ſometimes come out from the axillas. When out of flower it puts off the wool. The juice is blood-red. The true ſcales of the calyx are all terminated by a very ſimple ſpine; but in the reſt the ſpines are compound [d]. Calyxes twice as large as in the others. Ray purple on both ſides [e].

South of France and Italy. Annual. Cultivated in 1683, by Mr. James Sutherland.

3. Stem purpliſh at top, ſcarcely pubeſcent; the leaves even next the flowers ſubpinnatifid. Calyxes but half the ſize of the former. Ray yellow; on the outſide and at the baſe only purpliſh [f].

It much reſembles the common ſort (n. 4.), but the root, which is perennial, produces ſeveral ſtems; the flowers are ſmaller but more numerous; the ray is yellow, and each calyx contains fewer florets [g].

Native of the South of France and Italy.

Monſ. Villars is of opinion, that the *corymboſa* of Scopoli is the common ſort.

4. Root long fuſiform, with a few ſtiff fibres. Stem twelve to fifteen inches high, ſwelling juſt above the root, round, ribbed, purple, ſlightly downy, ſubumbelled at top. Leaves very numerous, cloathing the whole ſtem and decreaſing in ſize upwards, the lower ſeſſile, the upper half-ſtem-claſping, deeply toothed, the teeth armed with numerous yellow ſpines. At the baſe of the branches are leaves much broader than the reſt. Scales of the calyx purpliſh, edged and terminated with branching yellow ſpines; the undermoſt linear, pointed, dry, ſhining, fringed with long hairs towards the baſe, ſtraw-coloured within; without reddiſh brown towards the baſe, but ſtraw-coloured at the point. Corolla, ſegments lanceolate, purple, ſtraw-coloured below. Down of the ſeed ſeſſile, rays nine to twelve, generally eleven, either ſingle or with two or three clefts, fringed with long hairs. According to Dr. Stokes, they are pale brown, thrice as long as the ſeed, rays nearly equal, ſubulate at the baſe, a little above it generally dividing into three and ſometimes four briſtle-ſhaped branches. The chaffs of the receptacle are longer than the florets [h]. The flowers expand in dry, and cloſe in moiſt weather. They retain this property a long time. The plant is ſaid to be an excellent remedy in hyſterical caſes [i]. It indicates a very barren ſoil; is found all over Europe in dry paſtures; and is biennial; flowering from june to ſeptember.

[a] Haller. [b] Hort. upſ. [c] Allioni. [d] Linn. [e] Gouan. [f] Ibid. [g] Villars. [h] Woodw. Mſ. [i] Linn. amœn.

Linnæus exhorts the botaniſts of the ſouth of Europe to obſerve how this, together with the ſecond and third ſpecies, may be diſtinguiſhed, without having regard to the colour.

5. In appearance and habit this approaches neareſt to the third and fourth ſpecies, in its whitiſh ſtem. The calycine leaflets of the ray underneath are dark purple, but the upper part is rather yellow. It is allied to the ſecond ſpecies, by its ſeſſile flowers, which however are much ſmaller than in the third and fourth.

There are no limits between this and the three foregoing ſpecies, except in their ſize and the colour of the ray in the flower; though their habit be different. The nap on all is the ſame, and they loſe it when they grow old. The leaves have three nerves; the two ſide ones run diſtinctly from the baſe to the middle, and then unite with the other: in each, ſmall nerves run parallel acroſs from the principal to the ſide nerves. The upper part of the ſtem is branching; branches alternate, one-flowered, corymbed, with ſome primordial flowers ſeſſile in the diviſion of the ſtem and branches [k].

6. Leaves tomentoſe on both ſides: the pinnæ ſeſſile haſtate toothed, with a yellowiſh ſpine at each apex. Calyxes ſcarcely larger than in *Card. pycnocephalus*; the ſcales looſe ſpiny erect ſcarioſe narrow-lanceolate, ſcarcely the length of the calyx. Flowers purpliſh.

Native of the Pyrenees towards Spain [l]. Introduced in 1788, by John Sibthorp, M. D.[m].

7. A handſome ſhrub. Stem round, covered with wool preſſed cloſe. Leaves ſcattered, not decurrent, terminating in a ſpine; upper ſurface green, ſmooth; lower white with wool. Branches ſimple, only branching at the end and divided into leafy peduncles. Calyxes ſurrounded with a few leaves, like thoſe on the ſtem, but not longer than the calyx, unarmed, tomentoſe: the inner ſcales longer recurved ſubulate-ſpiny: ray ſhining yellow, ſcales ſubſerrate. Flowers the ſize of the ray.—In Barrancas about Chaſna; obſerved by Maſſon [n].

8. Stature of *Atractylis*. Stem not much branching, white-villoſe. Leaves of thiſtle, narrow, thorny. Calyxes on very ſhort peduncles, imbricate, echinate. Corolla yellow. Seeds crowned at the edge. Receptacle chaffy [o].—Perhaps a ſpecies of *Gorteria* or *Atractylis*. It requires farther obſervation.

A native of the Cape [p].

9. Leaves like thoſe of *Onopordum* or Cotton Thiſtle; pinnæ lobed or ſimple, all the pinnules toothed, and all the teeth putting out a ſtrong ſpine. Flower large ſeſſile, with white coloured ſcales; bractes lanceolate having ternate diverging ſpines placed in a pinnate order, the middle one longer and ſtronger before the flower opens; theſe bractes repreſent a beautifully netted hemiſphere, and when this is opened they are reflected. The true ſcales of the calyx are imbricated in ſeveral rows, they are lanceolate, purpliſh at the end, and not ſpiny; the inner ſcales are coloured white, linear-lanceolate acute, with one nerve underneath running to the tip. Tube of the corollules pale, border ſulphureous, ſhorter than the anther.

This differs from *Carlina acaulis*, in the duration of the root, which commonly dies as ſoon as the plant has perfected its ſeeds; in having larger leaves, leſs hard, leſs cut and cottony; in having the flower ſeſſile, and the receptacle ſucculent, fleſhy and ſweetiſh. This therefore is the ſort whoſe receptacle is eaten, either as the Artichoke, or preſerved with honey and ſugar [q].

The firſt ſort and this reſembling each other, and Linnæus's ſpecific character of that being faulty; Monſ. Villars propoſes the following characters: for the firſt.

1. Cauleſcent, leaves ſinuate-curled almoſt ſmooth, the ſegments of the chaffs club-ſhaped, root perennial.

[k] Gouan. [l] Linn. ſyſt. [m] Hort. kew. [n] Linn. ſuppl. [o] Linn. amœn. [p] Linn. ſyſt. [q] Villars.

For the ninth.

9. Stemleſs, leaves thickly tomentoſe ſinuate-pinnatifid, ſegments of the chaffs ſubulate-thickened.

Native of mountains of the Vaudois, and other high alps[a]: alſo of Dauphiné, *&c.*]

PROPAGATION AND CULTURE.

They may all be propagated by ſowing their ſeeds in the ſpring on a bed of freſh undunged earth, where they are deſigned to remain; for, as they ſend forth tap roots, they will not bear tranſplanting ſo well as moſt other plants. When the plants appear above ground, they ſhould be carefully weeded; and, as they grow in ſize, they ſhould be thinned, where they are too cloſe, leaving them about ten inches or a foot aſunder. The ſecond year moſt of theſe plants will flower; but, unleſs the ſummer proves dry, they rarely produce good ſeeds in England, and moſt of them decay ſoon after they have flowered, therefore it is pretty difficult to maintain theſe plants in this country.

[CARLINA. See *Arnica*, *Atractylis*, *Carduus*, *Cnicus*, *Gerberia*.

CARNA. See *Laurus*.]

CARNATION. See *Dianthus*.

[CAROB TREE. See *Ceratonia*.

CAROLINEA. *(So named in memory of her Serene Highneſs Sophia Carolina Louiſa Marchioneſs of Baden.)*

Fr. *Cacao ſauvage*.

*Lin. ſuppl.* 51. *n.* 1415. *Schreb.* 1125. Pachira. *Aublet. guian. Juſſ.* 279.

Claſſ. 16. 7. Monadelphia Polyandria.

Nat. order of *Columniferæ*. *Malvaceæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-form, truncate, quite entire, very ſhort, deciduous.

COR. *Petals* five, enſiform, very long, ſomewhat erect.

STAM. monadelphous. *Filaments* very numerous, connate at the baſe, filiform, very long. *Anthers* oblongiſh, erect.

PIST. *Germ* inferior, oblong, cylindric. *Style* filiform, the length of the ſtamens. *Stigma* ſimple.

PER. *Pome* ovate, five-grooved, two-celled.

SEEDS, twin, one above the other, ovate, gibbous, flattiſh within.

ESSENTIAL CHARACTER.

Monogynous. *Cal.* ſimple, tubular, truncate. *Pet.* enſiform. *Pome* five-grooved, two-celled.

SPECIES.

1. Carolinea Princeps.
*Lin. ſyſt.* 620. *ſuppl.* 314.
Pachira aquatica. *Aubl. guian.* 725. *t.* 291, 292.
*Leaflets about five ovate-lanceolate.*

2. Carolinea inſignis.
*Swartz. prodr.* 101.
Bombax grandiflorum. *Cavan. diſſ.* 5. *t.* 154.
Xiloxochitl flore capillaceo. *Hern. mex.* 68. fig.
*Leaflets about ſeven obovate-oblong.*

DESCRIPTIONS, *&c.*

1. It is a large thornleſs tree. Leaves alternate, petioled, digitate: leaflets three or five, broad-lanceolate, ſubpetioled, quite entire. Stipules two, ſhort, caducous. Flowers ſolitary, axillary, ſeſſile, very large and beautiful: petals yellow, filaments red, anthers purple. The fruit has the appearance of that of the Chocolate, or of Cucumber; toruloſe and obovate: with ſeeds like Almonds, the cotyledons plaited. Theſe are eatable, but very flatulent when taken raw in any quantity.—Native of Guiana, in ſalts by the banks of rivers[b]. Introduced in 1787, by Mr. Alexander Anderſon[c].

2. Native of Tobago and Vera Cruz[a].

PROPAGATION AND CULTURE.

They may be propagated by ſeeds, or by cuttings in a light loamy ſoil, plunged in the bark-ſtove, and watered moderately in ſummer, but ſparingly in winter.

CARO-MOLLI. See *Sideroxylon*.

CAROTA. See *Daucus*.]

[CAROXYLON. (From καρος, *ſopor*; *and* ξυλον, *lignum*.)

*Thunb. nov. gen.* 37. *Juſſ.* 85.

Claſſ. 5. 1. Pentandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* two-leaved, ſuborbiculate, rude, concave within, keeled on the outſide, very thin at the edge, erect, ſhorter than the corolla.

COR. one-petalled, five-parted: *tube* none: *border* ſegments obtuſe, broad, roundiſh, concave-curled, membranous, expanding, yellowiſh or duſky purpliſh.

*Nectary* ſcales five, inſerted into the middle of the corolla, ſomewhat narrower and ſhorter, and connate with it at bottom; they are placed on the converging fruit, are ovate, ſharpiſh, concave, membranous, yellowiſh with a greeniſh baſe.

STAM. *Filaments* five, inſerted into the ſide of the germ, ſhorter than the corolla, white, capillary. *Anthers* very ſmall.

PIST. *Germ* ſuperior, conic, ſmooth. *Style* ſimple, ſhorter than the corolla, erect, white. *Stigmas* two, revolute, whitiſh: ſeldom ſimple.

PER. none.

SEED one depreſſed, round, green, ſpiral, cloathed with a very thin membrane, covered with the permanent filaments and nectary.

ESSENTIAL CHARACTER.

*Cor.* five-petalled. *Nect.* five-leaved, converging, inſerted into the corolla. *Seed* cloathed.

SPECIES.

1. Caroxylon Salſola.
*Thunb. gen.* 38.
Canna boiſch, *afric.*

DESCRIPTION, *&c.*

Root perennial. Stem arboreſcent, erect, very branching, naked. Branches ſcattered ſtiff, flexuoſe, ſpreading, ſubdivided. The extreme branchlets ſcattered, round, flexile, tomentoſe-white, leafy, flowering. Leaves on the branchlets very frequent, imbricate, ſeſſile, ſubglobular-ovate, rather concave within and ſmooth; without gibbous, aſh-tomentoſe, obtuſe, very minute, preſſed cloſe. Axils loaded with other leaves. It differs from *Salſola* in having manifeſtly one ſtyle, a fruit in a veſſel, or rather the ſeed coated with the calycine appendicles or nectary converging, a two-leaved calyx, and a nectary:—from *Anabaſis*, to which it approaches very near, in the nectary, and a two-leaved calyx.

In Africa they uſe the aſhes, with mutton ſuet, to make ſope.

The corolla of Thunberg is called by Juſſieu the calyx, and is deſcribed by him to be five-parted, and two-ſcaled on the outſide [calyx, *Thunb.*], with five appendicles within (nectary, *Thunb.*). He ſpeaks of it as a doubtful genus, and recommends the inſertion of the ſtamens and ſtructure of the ſeed to be examined.]

CARPESIUM. (Καρπεσιον *of Galen.*)

*Lin. gen n.* 948. *Reich.* 1028. *Schreb.* 1284. *Juſſ.* 184. Conyzoides. *Tourn. act.* 1706.

Claſſ. 19. 2. Syngeneſia Polygamia Superflua.

Natural order of Compound flowers: diviſion of *Diſcoideæ*. *Corymbiferæ* Juſſ.

GENERIC CHARACTER.

CAL. *Common* imbricate; the exterior *leaflets* larger, ſpreading, reflex, the interior ones equal, cloſe, ſhorter.

COR. *Compound* equal. *Corollets* hermaphrodite in the diſk; female in the circumference—the *proper* one in the hermaphrodites funnel-form; *border* quinquefid, ſpreading. In the females tubular, quinquefid, converging.

STAM. In the hermaphrodites five, ſhort. *Anthers* cylindric.

PIST. In the hermaphrodites *germ* oblong; *ſtyle* ſimple; *ſtigma* bifid. In the females very ſimilar to the hermaphrodites.

PER. none. *Calyx* unchanged.

SEEDS. In the hermaphrodites obovate, naked. In the females very ſimilar to the hermaphrodites.

REC. naked.

[a] Allioni. [b] Linn. ſuppl. [c] Hort. kew. [d] Swartz.

ESSENTIAL CHARACTER.

*Cal.* imbricate; the outer ſcales reflex. *Down* none. *Recept.* naked.

SPECIES.

1. Carpeſium cernuum. *Drooping Carpeſium.*
*Lin. ſpec.* 1203. *Reich.* 3. 767. *hort. upſ.* 257. *Hall. helv. n.* 134. *Scop. carn. n.* 1030. *Jacqu. auſtr.* 3. *t.* 204. *Villars dauph.* 3. 184. *Barr. ic.* 1142. *Col. ecphr.* 1. 251. *t.* 252. *Mor. hiſt.* 3. 18. *ſ.* 6. *t.* 5. *f.* 27.
*Flowers terminal.*

2. Carpeſium abrotanoides.
*Lin. ſpec.* 1204. *Reich.* 3. 767. *Oſb. it. t.* 10.
*Flowers lateral.*

DESCRIPTIONS, *&c.*

[1. Root perennial. Stem leafy, erect, from a foot to two feet in height, round, ſtriated, hirſute, branched at top. Leaves oblong-lanceolate, alternate, acute, thinly and obſcurely ſerrulate, villoſe on both ſides, tapering towards the baſe, eſpecially the lower and root-leaves. The branches end in peduncles thickening beneath the flower and bending downwards. The outer leaflets of the calyx reſemble the ſtem-leaves, expand much, and are very unequal: the inner are erect, equal, oblong, obtuſe, green, but at the edge white and membranous. Diſk flat, equal. Corollets yellowiſh green, accompanied more or leſs at the border on the outſide with pellucid colourleſs capitate glandulous corpuſcles, which ſurround the tapered ſummit of the germ in greater abundance. The border ſhortly five-cleft and acute, expands in the florets of the diſk, but converges in thoſe of the ray. Receptacle flat, dotted, ample. Seeds brown, ſtriated, oval-linear, odorous, glandular and unctuous at top[a].]

According to Miller it is a biennial plant, flowering in July, and ripening the ſeeds in ſeptember.

[Native of the South of France, Italy, Carniola, Auſtria, Switzerland, and Japan. Introduced 1768, by Mr. Miller[b].

2. Stems branching, hardiſh. Leaves alternate, broad-lanceolate, attenuated into the petioles, obſcurely crenated, the length of a finger. Flowers ſcattered, often ſolitary at the axillas, ſeſſile or on very ſhort peduncles coming out ſingly along the branches, the ſize of a hazle-nut, nodding. Calyxes umbilicate, ſurrounded with ſpreading leaflets. Floſcules numerous. Seeds oblong, naked, ſmooth, ſmeared with a kind of balſam[c].

Native of China and Japan.]

PROPAGATION AND CULTURE.

Theſe plants may be propagated by ſeeds. The firſt muſt be ſown on a bed of light earth in the ſpring, and when the plants come up, if they are thinned and kept clean from weeds, they will require no other culture. The ſecond year they will flower and produce ſeeds, ſoon after which the plants decay.

2. The ſecond ſort ſhould be ſown on a hot-bed in the ſpring, and when the plants are fit to remove, they ſhould be each planted in a ſingle pot, and when the weather becomes warm, they may be expoſed, but in autumn they muſt be houſed.

CARPINUS. (*From carpere, to crop.*)
Engl. *Hornbeam*, or *Hardbeam tree.*
Fr. *Charme*, *Charmille.*
*Lin. gen. n.* 1073. *Reich.* 1171. *Schreb.* 1449. *Tournef.* 348. *Juſſ.* 409. *Raii. meth.* 140.
Oſtrya. *Mich.* 104.
Claſſ. 21. 8. Monoecia Polyandria.
Nat. order of *Amentaceæ.*

GENERIC CHARACTER.

* *Male flowers* diſpoſed in a cylindric ament.

CAL. *Ament* common on all ſides looſely imbricate, conſiſting of ſcales, ovate, concave, acute, ciliate, uniflorous.

COR. none.

STAM. *Filaments* generally ten, very ſmall. *Anthers* didymous, compreſſed, villoſe at the tip, bivalve.

* *Female flowers* diſpoſed in a long ament, upon the ſame plant.

CAL. *Ament* common looſely imbricate, conſiſting of lanceolate ſcales, which are villoſe, reflected at the tip, uniflorous.

COR. Calyciform, monophyllous, ſix-cleft; two of the diviſions larger than the reſt.

PIST. *Germs* two, very ſhort, two ſtyles on each, capillary, coloured, long. *Stigmas* ſimple.

PER. none. *Ament* becoming very large, concealing the ſeed at the baſe of each ſcale.

SEED. *Nut* ovate, angular.

OBS. *The* Carpinus *of Tournefort bears the ſeed within the baſe of the concave calycine ſcale.*
Oſtrya. *Mich. has the ſeed within the inflated calycine ſcale.*

ESSENTIAL CHARACTER.

*Cal.* one-leafed, with a ciliate ſcale. *Cor.* none.
MALE. *Stam.* twenty.
FEM. *Germs* two, with two *ſtyles* on each. *Nut* ovate.

SPECIES.

1. Carpinus Betulus. *Horn-beam, Hard-beam, Horſe-beech, Horn-beech, Wych-haſel.*
*Lin. ſpec.* 1416. *Reich.* 4. 168. *fl. ſuec. n.* 872. *Hudſ. angl.* 422. *With.* 1089. *Hall. helv. n.* 1627. *Scop. carn. n.* 1189. *Pollich pal. n.* 911. *Neck. gallob.* 390. *Pallas, roſſ.* 2. 6. *Hunt. Evel.* 138. *Duham. arb.* 1. 127. *t.* 49. *Matth.* 145. *Cluſ. hiſt.* 1. 55. 2. *Dod.* 841. *Lob. ic.* 2. 190. 1. *Camer. epit.* 71. *Ger.* 1296. *emac.* 1479. *Park.* 1406. *Baub. hiſt.* 1. 146. *Raii hiſt.* 1428.
β. C. orientalis. *Mill. dict. n.* 3.—fol. minori, fructu brevi. *Tourn. cor.* 40.
[γ. C. inciſa. *Cut-leaved Horn-beam.* Leaves oblong gaſh-ſerrate.]
*Scales of the ſtrobiles flat.*

2. Carpinus Oſtrya. *Hop Horn-beam.*
*Lin. ſpec.* 1417. *Reich.* 4. 168. *mant.* 496. *Gron. virg.* 151. *Scop. carn. n.* 1191. *Mich. gen.* 223. *t.* 104. *f.* 1, 2. *Jouſt. dendr.* 5. 212. *t.* 64. (Oſtrya.)
*Scales of the ſtrobiles inflated.*

3. Carpinus virginiana. *Flowering Horn-beam.*
*Mill. dict. n.* 4. *Du Roi harbecc.* 1. 130. *Ait. hort. kew.* 3. 363. *Pluk. phyt. t.* 156. *f.* 1.
*Leaves lanceolate acuminate; ſtrobiles very long.*

[4. Carpinus duinenſis.
*Scop. carn. n.* 1190. *t.* 60.
*Scales ſubcordate, doubly toothed; female ament ovate.*

DESCRIPTIONS, *&c.*

1. Leaves ovate, acuminate, ſharply ſerrate, ſtrongly nerved, bright green, ſmooth, three inches or more in length, and near two in breadth, on round petioles, which are ſlightly pubeſcent, half an inch in length, and having ovate red glandules at their baſe. Male aments ſolitary at the ſide of the twigs, ſeſſile, nodding from a bud, but without any leaves at their baſe, cylindric, blunt, an inch and half long; ſcales ſhining, ſmooth, yellow with brown tips. Stamens from ſeven or eight to fifteen or ſixteen at the baſe of the ſcale. On the ſame twig, not far from the male ariſes the female ament, from a leafy bud, it is ſolitary, nodding, and eight or nine lines in length; the ſtyles and ſtigmas are purple[d].

The leaves begin to open about the end of march, and are uſually quite out by the middle of april. The flowers are in full blow towards the end of the ſame month.]

The Hornbeam is very common in many parts of England, but is rarely ſuffered to grow as a timber-tree, being generally reduced to pollards by the country people; yet where the young trees have been properly treated, they have grown to a large ſize. I have ſeen ſome of them in woods, upon a cold ſtiff clay, which have been near ſeventy feet high, with large, noble, fine ſtems, perfectly ſtraight and ſound. Of late years, this has been only conſidered as a ſhrub, and never cultivated but for under-wood in the country, and in the nurſeries to

[a] Jacquin. [b] Hort. kew. [c] Linn. ſpec. [d] Pollich.

form hedges, after the French taſte; for in moſt of their great gardens, their cabinets, &c. are formed of theſe trees, as are their trelliſſes and hedges which ſurround their plantations. But ſince theſe ſort of ornaments have been almoſt baniſhed from the Engliſh gardens, there has been little demand for theſe trees in the nurſeries.

1. β. The Eaſtern Hornbeam is a tree of humble growth, rarely riſing above ten or twelve feet high in this country, ſhooting out many horizontal irregular branches, ſo that it cannot eaſily be trained up to a ſtem. The leaves of this ſort are much ſmaller than thoſe of the common Hornbeam, and the branches grow cloſer together, therefore may be very proper for low hedges, where they are wanted in gardens; being a very tonſile plant, it may be kept in leſs compaſs than almoſt any deciduous tree.

[2. The female fruits reſemble Hops, but are made of inflated ſcales, cloſed on every ſide, villoſe at the baſe, including a bilocular ſeed. It differs from the firſt ſpecies in having branched filaments; emarginated anthers; the female ament compoſed of little compreſſed bags inſtead of ſcales, and a bilocular nut. Leaves elliptic, acuminate, doubly-toothed, nerved, the nerves ferruginous. Male aments terminal, the length of a finger; females white[e]. Cultivated in 1730.]

The Hop Hornbeam ſheds its leaves in winter, with the Elm, and other deciduous trees. This tree was firſt obſerved in Italy, and is very common in Germany, growing promiſcuouſly with the common ſort. It is alſo ſaid to grow plentifully in many parts of North America, but it is doubtful whether that is not a different ſort from this. The Hop Hornbeam is of quicker growth than the common ſort, but what the wood of that will be I do not know; for there are but few of the trees in England growing upon their own roots, moſt of them having been grafted upon the common Hornbeam, which is the uſual method of propagating them in the nurſeries; but the trees ſo raiſed are of ſhort duration, for the graft generally grows much faſter than the ſtock, ſo that in a few years there is a great diſproportion in their ſize; and where they happen to ſtand expoſed to ſtrong winds, the graft is frequently broken from the ſtock, after many years growth; for which reaſon I would caution every perſon not to purchaſe any of theſe trees which have been ſo propagated.

3. The Virginian flowering Hornbeam will grow to the height of thirty feet, or more, and is of quicker growth than either of the former ſorts: it ſheds its leaves in autumn, about the ſame time with the Elm; and during the time of its verdure, this tree makes a good appearance, being well clothed with leaves, which are of a deep, ſtrong, green colour, reſembling more the long-leaved Elm than the Hornbeam.

[4. Two fathoms high. Trunk ſhort and ſoon dividing into branches. Leaves ovate acuminate, doubly ſerrate, ſmooth, hardiſh, on ſhort petioles, and having two deciduous ſtipules at the baſe. Female aments a little longer than the leaves, formed of hard imbricate ovate or ſemicordate ſcales, inflected on one ſide to the baſe, and under this flexure covering the germ which is not ſtriated, obtuſangular, as in the firſt ſpecies, gloſſy, crowned with a five-toothed calyx, which in *C. Betulus* is four-toothed[f].]

PROPAGATION AND CULTURE.

1. As the common Hornbeam will thrive upon cold, barren, expoſed hills, and in ſuch ſituations where few other ſorts will grow, it may be cultivated to great advantage by the proprietors of ſuch lands. It will reſiſt the violence of winds better than moſt other trees, and is by no means ſlow in its growth. But where theſe are propagated for timber, they ſhould be raiſed from ſeeds, upon the ſame ſoil, and in the ſame ſituation, where they are deſigned to grow; and not brought from a better land, and a warmer ſituation, as is too frequently practiſed. Nor ſhould they be propagated by layers, which is the common method where they are intended for hedges or underwood; for which thoſe ſo raiſed will anſwer the purpoſe full as well as thoſe raiſed from ſeeds, but the latter muſt always be preferred for timber-trees.

The ſeeds of this tree ſhould be ſown in the autumn, ſoon after they are ripe; for if they are kept out of the ground till ſpring, the plants will not come up till the following year. When the plants appear, they muſt be kept very clear from weeds, and treated as other foreſt-trees; in two years time they will be fit to tranſplant, for the ſooner all trees which are deſigned for timber are planted where they are to remain, the larger they will grow, and the wood will be firmer and more durable. If theſe are not intermixed with other trees, they ſhould be planted pretty cloſe, eſpecially on the outſide of the plantations, that they may protect and draw each other up: and if they are kept clean from weeds three or four years, it will greatly promote their growth; after that, they will have obtained ſufficient ſtrength to keep down the weeds themſelves.

[Others prefer keeping the ſeeds in ſand till the ſpring, and then ſowing them in rows two feet and a half aſunder, and a foot diſtance in the rows, or elſe broadcaſt and thin on beds of freſh earth, three feet and a half or four feet in breadth, with alleys between of eighteen inches or two feet; covering the ſeeds three quarters of an inch deep: and in february following looſening the ſurface ſo as not to diſturb the ſeeds, and ſprinkling on ſome freſh mould. In theſe beds they may remain three years; and by that time they will be fit either for hedges or woods. For the former purpoſe, they may be removed into ten-feet rows, and five feet from each other in the rows, training them annually, and keeping them light and thin at top. After four years they will be ſeven or eight feet high, and may be planted out complete hedges where they are deſigned to remain. The ſtraighteſt plants may be reſerved for trees, and planted from the firſt nurſery, in rows five feet aſunder, and two feet diſtance in the rows. Some prefer the ſpring for tranſplanting; and others recommend it to be performed early in october[g].

For a wood of Hornbeam, Mr. Hanbury recommends to prepare the ground by a crop of Oats, Barley or Turneps, to plough very deep when theſe are off, and to harrow well. Juſt before planting to croſs-plough and harrow as before. To plant from the ſeminary at two years old, in four-feet rows, at two feet diſtance in the rows. When they are too thick to take away every other tree, and to thin them afterwards as often as their heads touch. Where hares and rabbits cannot be kept out, they muſt continue in the nurſery, till their leading ſhoot is out of reach.]

As the trees advance in growth they muſt be thinned with caution, cutting away the moſt unpromiſing plants gradually, ſo as not to let in too much cold at once, eſpecially on the borders of the plantation.

The timber of this tree is very tough and flexible, and might be converted to many uſeful purpoſes, if it were ſuffered to grow to a proper ſize. But this not having been the caſe, the principal uſes it is applied to is for turnery ware, for which it is an excellent wood, for mill-cogs, heads of beetles, ſtocks and handles of tools, and yokes. It is alſo an excellent fuel. [Linneus obſerves that the wood is very white and tough, harder than Hawthorn, and capable of ſupporting great weights; and that the inner bark is much uſed in dying wool yellow.]

The leaves remain upon the trees till the young buds in the ſpring thruſt them off, ſo that they afford much ſhelter to birds in winter: this alſo renders them very proper to plant round the borders of other plantations in expoſed ſituations to defend and promote the growth of more tender trees.

[e] Scopoli. [f] Hort. kew. [g] Scopoli.

[h] Boutcher and Hunter's Evelyn.

[The Hornbeam preſerves itſelf well from the bruttings of deer, ſo that clumps of this tree are proper in parks, both for beauty and ſhelter.

There is a variety with ſtriped leaves, which is propagated by budding on the common ſort, but the colours are not ſtrong or lively [1].

2. The Hop Hornbeam may be increaſed in the ſame manner with the common ſort: and they may all be propagated by layers. The ſtools for the Eaſtern Hornbeam ſhould be a yard aſunder, and the others about two yards. They ſhould be laid in the autumn: and in twelve months they will have ſtruck root, and may be taken off to plant in the nurſery; or this may be done the ſpring following [k].

CARPINUS. See *Dodonæa*, *Euonymus*, *Hedyſarum*.

CARPOBOLUS. See *Lycoperdon*.

CARPODETUS. (*From* καρπος, *fruit, and* δεω, *to bind; the fruit being ſurrounded or bound by a ring or fillet.*)

*Lin. gen. Schreb. n.* 360. *Forſt. gen.* 17.

Claſſ. 5. 1. Pentandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* turbinate, faſtened to the germ, five-toothed: *teeth* ſubulate, deciduous.

COR. *Petals* five, ovate, ſmall, inſerted into the margin of the calyx.

STAM. *Filaments* five, ſubulate, ſhort, inſerted into the margin of the calyx. *Anthers* roundiſh.

PIST. *Germ* inferior. *Style* filiform, longer than the ſtamens. *Stigma* flat-headed.

PER. *Berry* dry, globular, ſurrounded with the margin of the calyx faſtened to it like a ring, five-celled.

SEEDS a few, ſlightly angular.

ESSENTIAL CHARACTER.

*Cal.* five-toothed, faſtened to the germ. *Cor.* five-petalled. *Stigma* flat-headed. *Berry* globular, five-celled.

SPECIES.

1. Carpodetus ſerratus.
*Forſt. gen.* 17. *ſ. auſtral. n.* 111.
Native of New Zealand.]

CARROT. See *Daucus*.

——— Candy. See *Athamanta*.

CARTHAMOIDES. See *Carthamus*.

CARTHAMUS. (*From* καθαιρω, *to purge.*)

Engl. *Baſtard Saffron* or *Safflower*. Fr. *Carthame*.

*Lin. gen. n.* 931. *Reich.* 1010. *Schreb.* 1261. *Gærtn. t.* 161. *Tourn.* 258. *Vaill. A. G.* 1718. *Juſſ.* 172. Atractylis. *Vaill. A. G.* 1718. Carthamoides. *Vaill. A. G.* 1718.

Claſſ. 19. 1. Syngeneſia Polygamia Æqualis.

Nat. order of *Compoſitæ*, or compound flowers, and diviſion of *Capitatæ*.—*Cinarocephalæ* Juſſ.

GENERIC CHARACTER.

CAL. *Common* ovate, imbricate; *ſcales* numerous, contracted below, increaſed at the tip by a foliaceous appendicle which is ſubovate, flat, ſpreading, obtuſe.

COR. *Compound* uniform, tubular. *Corollets* hermaphrodite, equal—the proper one monopetalous, funnel-form; *border* five-parted, erect, ſubequal.

STAM. *Filaments* five, capillary, very ſhort. *Anthers* cylindric, tubular.

PIST. *Germ* very ſhort. *Style* filiform, longer than the ſtamens. *Stigma* ſimple.

PER. none. Calyx converging.

SEEDS ſolitary.

REC. flat, piloſe, hairs longer than the ſeed.

OBS. Carthamus V. *has the ſeed almoſt naked*—quite ſo. *Allion.*

Atractylis V. *has the ſeed furniſhed with an obſcure crown.*

Carthamoides V. *has the ſeed furniſhed with a piloſe crown.*

C. lanatus *bears neutral florets on the radius*; and C. creticus *abortient ones.* R.

ESSENTIAL CHARACTER.

*Cal.* ovate, imbricate with ſcales, which at the end are ſubovate-foliaceous.

SPECIES.

1. Carthamus tinctorius. *Officinal Baſtard Saffron. Safflower.*
*Lin. ſpec.* 1162. *Reich.* 3. 697. *mat. med. Gærtn. fruct.* 2. 375. *Thunb. jap.* 307. *Lour. cochinch.* 481. *Allion. pedem. n.* 562.
Cnicus. *Baub. pin.* 378. 1. *Cluſ. hiſt.* 2. 152. *Beſl. eyſt. eſt.* 11. *t.* 3. *f.* 1. *Rumph. amb.* 5. *t.* 79.
Carthamus ſ. Cnicus. *Baub. hiſt.* 3. 79. *Raii hiſt.* 302. *Ger. emac.* 1169. 1.
*Leaves ovate entire ſerrate-aculeate.*
2. Carthamus lanatus. *Yellow Diſtaff-Thiſtle*, or *woolly Carthamus.*
*Lin. ſpec.* 1163. *ſyſt.* 730. *Reich.* 3. 968. *mant.* 462. *Villars dauph.* 3. 36. *Gouan. hort. monſp.* 427. *Blackw. t.* 468.
Atractylis. *Baub. pin.* 379. 1. *Dod. pempt.* 736. *Camer. epit.* 561. *Col. ecphr.* 1. 19. *t.* 23. *Hall. helv. n.* 192. *Scop. carn. n.* 1016. *Allion. pedem. n.* 564. *Raii hiſt.* 304. 4. *Park.* 963. 1.
*Stem hairy, woolly toward the top; lower leaves pinnatifid, upper ſtem-claſping toothed.*
3. Carthamus creticus. *Cretan Carthamus.*
*Lin. ſpec.* 1163. *ſyſt.* 730. *Reich.* 3. 698.
Atractylis fl. leucophæo. *Vaill. act.* 172. *Hall. goett.* 363. *Raii hiſt.* 304. 5.
Cnicus cret. atractylidis fol. & facie, fl. leucophæo ſ. candidiſſimo. *Tourn. cor.* 33.
*Stem ſomewhat gloſſy, calyxes a little woolly, floſcules about nine, lower leaves lyrate.*
4. Carthamus tingitanus. *Tangier Carthamus.*
*Lin. ſpec.* 1163. *Reich.* 3. 699.
Carduus. *Mor. hiſt.* 3. 159. *ſ.* 7. *t.* 34. *f.* 19.
*Radical leaves pinnate, ſtem-leaves pinnatifid; ſtem one-flowered.*
5. Carthamus coeruleus. *Blue-flowered Carthamus*, or *Baſtard Saffron.*
*Lin. ſpec.* 1163. *ſyſt.* 730. *Reich.* 3. 699. *hort. cliff.* 394. tingitanus α.
Cnicus. *Baub. pin.* 378. 2. *Cluſ. hiſt.* 2. 152. *f.* 2. *Raii hiſt.* 302. 2. *Ger. emac.* 1169. 2. *Park.* 260. *f.* 3.
*Leaves lanceolate ſpiny-toothed, ſtem one or two-flowered.*
[6. Carthamus mitiſſimus. *Small Carthamus.*
*Lin. ſpec.* 1164. *ſyſt.* 730. *Reich.* 3. 699. *Gouan. illuſtr.* 64. *Ger. prov.* 182.
Carthamoides. *Vaill. act.* 1718. 772.
Carduncellus. *Mor. hiſt.* 3. 159. 14.
*Leaves unarmed, thoſe next the root toothed, on the ſtem pinnate.*]
7. Carthamus Carduncellus. *Mountain Carthamus.*
*Lin. ſpec.* 1164. *Reich.* 3. 699. *Gouan. hort. monſp.* 427. *illuſtr.* 65. *Villars dauph.* 3. 36.
Cnicus. *Herm. lugdb.* 164.
Carduncellus. *Lob. ic.* 2. 20. *Allion. pedem. n.* 563.
*Stem-leaves linear pinnate the length of the plant.*
8. Carthamus arboreſcens. *Tree Carthamus.*
*Lin. ſpec.* 1164. *Reich.* 3. 700. *mant.* 462.
Carthamoides. *Vaill. act.* 1718. *p.* 772.
Cnicus hiſpanicus arb. foetidiſſimus. *Tourn. inſt.* 451.
*Leaves enſiform ſinuate-toothed.*
[9. Carthamus ſalicifolius. *Willow-leaved Carthamus.*
*Lin. ſyſt.* 731. *ſuppl.* 350.
*Shrubby; petioles ſpiny, leaves lanceolate entire tomentoſe beneath, pungent at the end; branches one-flowered.*]
10. Carthamus corymboſus. *Corymbed Carthamus.*
*Lin. ſpec.* 1164. *ſyſt.* 731. *Reich.* 3. 700. *hort. cliff.* 391. *Gron. orient.* 250. (Echinops.)
Chamæleon niger. *Baub. pin.* 380. 6. *Dalech.* 1454. *Dod. pempt.* 727.
Carduus Chamæleon. *Mor. hiſt.* 159. *ſ.* 7. *t.* 33. *f.* 17.
*Flowers corymbed numerous.*

DESCRIPTIONS, *&c.*

1. This is an annual plant, which riſes with a ſtiff ligneous ſtalk two feet and a half, or three feet high, dividing upwards into many branches, with ovate pointed ſeſſile leaves. The flowers grow ſingle at the extremity of each branch: the heads are large,

[1] Boutcher. [k] Hunter's Evelyn.

large, inclosed in a scaly calyx; each scale is broad at the base, flat, and formed like a leaf of the plant, terminating in a sharp spine. The lower part of the calyx spreads open, but the scales above closely embrace the florets, which stand out near an inch above the calyx; these are of a fine Saffron colour, and this is the part which is gathered for the uses above-mentioned. When the florets decay, the germs become oblong, angular seeds, of a white colour, and having a pretty strong shell or cover to them. It flowers in july and august, and the seeds ripen in autumn; but if the season proves cold and moist, when the plants are in flower, there will be no good seeds produced; so that there are few seasons, wherein the seeds of this plant come to perfection in England.

It grows naturally in Egypt, in some of the warm parts of Asia, [and according to Allioni, on dry hills in the county of Nice: but in the latter country it has probably established itself only in modern times, since Pliny (25, 15.) says, that it was unknown in Italy under Vespasian.] Mr. Miller says, that he has frequently received the seeds from the British islands in America, but whether they were originally carried thither, or if it naturally grows there, he could never be rightly informed.

2. This plant is annual, perishing soon after the seeds are ripe: the lower leaves spread flat upon the ground; these are five or six inches long, narrow, and deeply indented on both sides; they are hairy, and have a few soft spines on their edges: the stalk rises about two feet high, covered with hairs, and garnished with oblong hairy leaves, which embrace the stalk, and are deeply sinuated, with sharp thorns growing on their edges. The upper part of the stalk divides into many branches, which have leaves of the same form but smaller. The flowers are produced at the end of the branches, having a cluster of stiff, hard, prickly leaves below the scaly calyx, which contains many yellow florets, succeeded by oblong angular seeds. It flowers in june and july, and the seeds ripen in autumn.

[It has the appearance, says Scopoli, of *Carlina corymbosa*. The florets are first golden, then saffron-coloured, with the edges of the segments black, and five black lines running down the corolla. Those in the circumference, according to Haller, are abortive. The receptacle is conic. The seeds are striated, but not to the bottom, between the angles. The aigrette is scarcely longer than the seed.]

It grows naturally in the South of France, Spain and Italy, where the women use the stalks for distaffs, whence it had the title of Distaff Thistle. It is by some called Bastard wild Saffron. The leaves are sometimes ordered for medicine, and are supposed to have the same virtues as Carduus Benedictus.

[It was cultivated in 1596, by Gerarde[a].]

3. This is an annual plant, growing near four feet high. It differs from the foregoing in having a smooth stalk: the leaves are very stiff, deeply indented, smooth, and armed with very strong spines: the heads of flowers are oval, and the florets white. It was discovered by Tournefort in the island of Crete or Candia, whence he sent the seeds to the royal garden at Paris.

[Haller observes, that the florets have five black lines at the opening, which divide and make the edges of the segments black: those in the circumference are abortive. The calyx is cobwebbed.

It was cultivated in 1739, by Mr. Miller[b].]

4. This has a perennial root. The stalks rise about a foot and a half high, seldom putting out any branches. Leaves the whole length of the stalk, narrow spear-shaped, deeply serrate, each of the serratures ending in a sharp point: [those next the root, as Linneus observes, entirely pinnate, but the stem-leaves pinnatifid.] The stalk is terminated by one large scaly head of blue flowers. [It is a native of Barbary:] and was first brought to England from Tangier. [Mr. Miller cultivated it in 1768[c]. Linneus remarks, that it is scarcely distinct from the species next following.]

5. This rises with a single stalk about two feet high, of a purplish colour, hairy and channelled, closely beset with broad spear-shaped leaves, sharply serrate, and covered with a short hairy down. The stalk is terminated by a single large head of blue flowers, having a scaly calyx composed of two orders of leaves; the outer broad, long, and armed with sharp spines on their edges; the inner narrow, and terminated by a sharp thorn. It flowers in june and july, and the seeds ripen in autumn. It is supposed by some to be the same with the foregoing, which is a great mistake, for they are extremely different. It grows naturally *in* Spain, France, and Italy, on arable land.

[According to the observation of Linneus, the stems are often procumbent: the leaves are smooth on their upper surface; the calyx is leafy; the anthers are black; and the down of the seed hairy.

It was cultivated with us in 1640[d].

6. Root-leaves, some lanceolate, dilated at the end and very smooth, from the middle to the end toothed, the teeth turned upwards, sharp, ending in a small thorn; others pinnatifid, like those of *Corespupus* or *Leontodon autumnale*: the pinnules linear-lanceolate, refalcated, quite entire; some eared at the base underneath. Stem-leaves interruptedly pinnatifid, like those of *Scabiosa cebrolenca*. The leaves vary much in size. Stem one-flowered, smooth, slightly striated, with one or two leaves. Calyx large: the outer scales larger, concave, leafy, spinose-ciliated, often quite entire, seldom laciniated and generally destitute of conspicuous veins or nerves. Inner scales narrower, obtuse, with a membranous, dilated, ciliated end, as in *Jacea*. Flower bright blue[e].

Sometimes the plant has no stem, and sometimes the stem is four inches high[f]. The down of the seed is hairy[g].

The garden plant is hardly to be distinguished, by its decumbent stem four inches in length, and its longer soft sinuate leaves[h].

Native of France, about Paris and Montpellier. Introduced here in 1776, by Monsr. Thouin[i].]

7. Root perennial. Stem about six inches high (in gardens), channelled and hairy. Leaves long and narrow, ending in several sharp spines, their edges indented, each indenture ending in a spine. Each stalk is terminated by one large head of blue flowers.

[Leaves villose and rugged, having prominent thorny-ciliate nerves. Root-leaves obovate; the rest pinnatifid: pinnules refalcated, having small thorns about the edge, and being usually eared at the base. Stem-leaves from one to three; but in garden plants, or such as grow in a strong soil, nine. Outer scales of the calyx leafy, at the end dilated green and thorny, nicely three-nerved and netted, as in the common sort: inner scales narrower, ciliate at top, but less dilated than in the foregoing. It varies in size from an inch, on rocks, to a foot, in pastures. In gardens the leaves are much softer[k]. The down of the seed is hairy, unequal and deciduous[l]. Native of the South of France, Spain and Italy. The root is eaten in Africa[m]. Cultivated in 1739, by Mr. Miller[n].

8. The whole plant is pubescent. Stem firm, of a man's height, (eight to ten feet) evergreen. Leaves stem-clasping, ensiform or lanceolate, a foot long, pinnatifid-sinuate, toothed, mostly spinous at the end; rib white. Flower terminal (one or two), sessile, yellow, sweet smelling. Calyx with ciliate, spreading, pointed scales. Style twice as long as the corolla. Down hairy[o].] Mr. Miller received it from Andalusia, where it grows naturally in great plenty, and cultivated it before 1759.

[a] Hort. kew. [b] Ibid. [c] Gouan. illustr. [d] Gouan. [e] Linn. [f] Ger. prov. [g] Hort. kew. [h] Gouan. illustr. [i] Linn. and Allioni. [k] Shaw. [l] Hort. kew. [m] Linn. mant.

[9. This has the habit of *Gorteria*, but the flowers are hermaphrodite, the ſtigma undivided, the down plumoſe, the receptacle chaffy, and the florets all diſcoid, therefore they have no ray. It is a woody ſhrub; the branches long and tomentoſe; the leaves approximating, ſmooth above, ſilky beneath; at the baſe or on the petiole, and ſometimes but rarely on the edge having two or four ſpines; always ending in a *ſpine*. Branchlets one-flowered. Calyx imbricate; the outer ſcales acute and longer, ſimilar to the ſtem-leaves. Florets white[1]. Native of Madeira. Introduced 1784, by Meſſrs. Lee and Kennedy[2].]

10. Root perennial. Stem ſingle, white, ſmooth, and channelled, never putting out any ſide-branches. Leaves long, narrow, pale green, cloſely armed on their edges with ſhort ſtiff ſpines, which come out double. Stems terminated by ſingle oval ſcaly heads of white flowers, each ſcale terminated by a purpliſh ſpine; the ſcaly calyx is cloſely joined at the top, ſo that few of the florets appear viſible above it; and it is guarded by a border of long narrow prickly leaves, riſing conſiderably above the flowers; which appear from june to auguſt.

[It has the habit of *Echinops*. The quality is corroſive. The fructification ſhould be examined more accurately[3].——Native of Apulia, the Helleſpont, Lemnos, and Thrace.] Mr. Miller ſays that he received the ſeeds from Spain, where it grows naturally. [Cultivated 1714, by Charles Dubois, Eſq.[4]

PROPAGATION AND CULTURE.

11. It is propagated by ſeeds, which ſhould be ſown in april, upon a bed of light earth: the beſt way is to ſow them in drills, drawn at two feet and a half diſtance from each other, in which the ſeeds ſhould be ſcattered thinly, for the plants muſt not ſtand nearer each other than a foot in the rows; but as ſome of the ſeeds will fail, ſo a greater quantity ſhould be ſown, as it will be eaſy to thin the plants, at the time when the ground is hoed. If the ſeeds are good, the plants will appear in leſs than a month; and in a fortnight or three weeks after, it will be proper to hoe the ground to deſtroy the weeds, and at the ſame time the plants ſhould be thinned where they are too cloſe; but at this time they ſhould not be ſeparated to their full diſtance, leſt ſome of them ſhould afterward fail; ſo that if they are now left ſix inches aſunder, there will be room enough for the plants to grow, till the next time of hoeing, when they muſt be thinned to the diſtance they are to remain for good: after this they ſhould have a third hoeing, which, if carefully performed in dry weather, will deſtroy the weeds and make the ground clean, ſo that the plants will require no farther care, till they come to flower; when, if the Safflower is intended for uſe, the florets ſhould be cut off, from the flowers as they come to perfection; but this muſt be performed when they are perfectly dry, and then they ſhould be dried in a kiln, with a moderate fire, in the ſame manner as the true Saffron, which will prepare the commodity for uſe.

But if the plants are deſigned for ſeed, the flowers muſt not be gathered; for if the florets are cut off, it will render the ſeeds abortive, though they may ſwell and grow to their uſual ſize, as I have frequently experienced; yet when they are broken, there will be found nothing more than a ſhell without any kernel. And this frequently happens to be the caſe with theſe ſeeds, in wet cold ſeaſons; and in very wet ones the germ will rot, and never come ſo forward as to form a ſhell.

I have been informed, that this plant was formerly cultivated in the fields in ſeveral parts of England, for the dyers uſe; and particularly in Glouceſterſhire, where the common people frequently gathered the florets, and dried them, to give a colour to their puddings and cheeſecakes; but by putting in too great quantity, they acquired a cathartic quality.

If this plant was ever cultivated here in great quantity, it is ſurpriſing how it came to be ſo totally neglected, as that at preſent, there are not the leaſt traces to be met with, in any part of England, of its ever having been cultivated; inſomuch that the commodity is ſcarcely known, except to thoſe who deal in it. The quantity annually conſumed in England is ſo great, as to make it a conſiderable article of trade, ſo that it might be well worthy of public attention; for although the ſeeds ſeldom come to perfection in England, yet theſe might be procured from abroad, and the plants would conſtantly produce the flower, which is the only part uſed in dyeing.

[It appears from Dr. Turner's herbal, that the Baſtard Saffron or Safflower was cultivated in England in 1551[5]. The information to which Mr. Miller alludes, is confirmed by Mr. Houghton in his Collections; wherein he ſays that Henry Hall, Eſq. relates (nov. 14, 1683), that twenty-five acres, in the vale of Eveſham in Glouceſterſhire, was ſowed with this ſeed; the ſoil a mixed ſand, of about 15s. an acre value; it bore a crop of Wheat the year before, was dreſſed for Barley, and had a harrowing extraordinary. This piece of ground was taken for two years by an adventurer in this ſeed, at the rate of 25l. per acre, in conſideration that this plant is ſaid to be a great impoveriſher of land. He ſold the flowers in London for 10l. per pound; a price he ſaid much below his expectation; he gained above 30s. an acre clear profit, excepting the price of the ſeed: but of this there was a plentiful return, (about one hundred and forty buſhels) which had it been well managed, would have amounted to a conſiderable value: for want of experience it was too ſoon gathered, and at a greater charge than needed, neither was it ſo carefully cured, as it ought, which much impaired the price[6].

The common people took it for Saffron, and privately ſtole conſiderable quantities, and uſed it in their puddings, cakes, and even bread; but finding in it a purgative quality, which to ſome was very troubleſome, they ſold their remaining ſtock to an apothecary[7].

Mr. Hall ſowed ſome of the ſeed in february, and ſome about the middle of march; both thrived very well, flowered, and was fit to gather in july, and was gathered before the 20th of that month: by which means women and children could be had in plenty to gather the flowers, before gleaning time came on. He alſo found that plants from which the flower was not gathered, produced ſeed to the full as good as what is brought from Germany. And, that though it certainly impoveriſhes the ground, yet that the piece which was ſown with Safflower, did, the year following, bear a good crop of Oats, and, had it been fallowed and well dreſſed the third year, would have been fit for Wheat or Safflower again. He adds that turkies greedily fed on the ſeed, and in a ſhort time became very fat: that geeſe fed on it, grew fat much ſooner than thoſe of their neighbours, that fed on other grain; and that a colt, eating of this ſeed, recovered in a ſhort time from great poverty to a very good condition[8].]

This plant is cultivated in great plenty, in ſome parts of Germany, where the ſeeds conſtantly come to perfection; and as I have obtained a ſhort account of their method of cultivation, from a curious gentleman of that country, I ſhall inſert it for the benefit of thoſe who may be induced to engage in this undertaking.

The ground in which they propoſe to ſow the Carthamus, has always a double fallow given to it, firſt to deſtroy the weeds, and afterward to make it fine. They make choice of their lighteſt land, and ſuch as is clear from Couch Graſs, and other troubleſome weeds. After the land has been fallowed a ſummer and winter, in which time they give it four ploughings, and harrow it between each, to break

[1] Linn. ſuppl. [2] Hort. kew. [3] Linn. ſpec. and ſyſt. [4] Hort. kew. [5] Hort. kew. [6] Hought. collect. 4. 355. [7] Ibid. p. 360. [8] Ibid. p. 358.

the clods, and pulverize it: in the latter end of march they give it the laſt ploughing, when they lay it in narrow furrows of about five feet or a little more, leaving a ſpace of two feet between each: then they harrow theſe lands to make them level, and after it is finiſhed, they ſow the ſeeds in the following manner. With a ſmall plough, they draw four ſhallow furrows in each land, at near a foot and a half diſtance, into which they ſcatter the ſeeds thinly; then with a harrow, whoſe teeth are little more than one inch long, they draw the earth into the drills to cover the ſeeds; after this, they draw a roller over the ground, to ſmooth and ſettle it. When the plants are come up, ſo as to be diſtinguiſhed, they hoe the ground to deſtroy the weeds; and at this firſt operation, where the plants happen to be cloſe, they cut up the leaſt promiſing, leaving them all ſingle, at the diſtance of three or four inches; which they always ſuppoſe will be ſufficient room for their growth, till the ſecond time of hoeing, which muſt be performed in about five weeks after their firſt; in which they are guided by the growth of the weeds, for as this work is performed with a Dutch hoe, ſo they never ſuffer the weeds to grow to any ſize before they cut them; in which they judge right, for when the weeds are ſmall, one man will hoe as much ground in a day, as can be performed by three, when they are permitted to grow large; and the weeds will be more effectually deſtroyed.

They give a third hoeing to the plants, about five or ſix weeks after the ſecond; which generally makes the ground ſo clean, as to require no more cleaning, till the Carthamus is pulled up. When the plants begin to flower, and have thruſt out their florets (or thrum) to a proper length, they go over the ground once a week to gather it; and as it is from time to time gathered, it is dried in a kila for uſe. There is uſually a ſucceſſion of flowers for ſix or ſeven weeks. After the crop is gathered, the ſtalks are pulled, and tied in bundles for fuel; and when they have been ſet up a few days to dry, they are carried off, and the ground is ploughed for Wheat; which they ſay, always ſucceeds well after this plant.

The good quality of this commodity is chiefly in the colour, which ſhould be of a bright Saffron colour, and herein that which is cultivated in England often fails; for if there happens much rain during the time the plants are in flower, it will cauſe the florets to change to a dark or dirty yellow, which will alſo befal that which is gathered when there is any moiſture remaining upon it; therefore great care muſt be taken not to gather it till the dew is quite dried off, nor ſhould it be preſſed together till it has been dried on the kiln. The manner of doing this being the ſame as for the true Saffron, I ſhall not mention it here, but deſire the reader to turn to the article CROCUS, where that is fully treated.

It is cultivated at preſent in many parts of Europe, and alſo in the Levant, whence great quantities are annually imported into England, for dyeing and painting.

In Spain this plant is cultivated in their gardens, as Marigolds are in England, to put into their ſoups, olios, and other diſhes, to give them a colour. The Jews alſo are very fond of this, and mix it in moſt of their viands; and it is very probable they were the perſons who firſt carried the ſeeds of this plant to America, and taught the inhabitants the uſe of it, for it is now as commonly uſed by the Engliſh there, as in any part of Europe.

This plant may be admitted to have a place in the borders of large gardens, where it will add to the variety, during the time of its continuance in flower, which is commonly two months, or ten weeks; for if the ſeeds are ſown in the beginning of april, the firſt flowers will appear in the middle of july at fartheſt; and there will be a ſucceſſion of flowers on the ſide branches, till the end of ſeptember, or in mild warm ſeaſons till the middle of october, during which time the plants will not be deſtitute of flowers; which being of a bright Saffron colour, make a pretty appearance; and if the plants are ſupported to prevent their being broken, or blown down by the wind, they will not interfere with the other flowers, becauſe theſe have a regular upright growth.

When they are cultivated for this purpoſe, the ſeeds ſhould be ſown in the places where the plants are deſigned to remain, becauſe they do not bear tranſplanting well; therefore three or four ſeeds ſhould be ſown in each patch, leſt any of them ſhould fail; and when the plants are grown ſo ſtrong as to be out of danger, the moſt promiſing in each patch ſhould be left, and the others pulled up, that they may not draw or injure thoſe which are to ſtand.

2, 3. If the ſeeds of theſe ſorts be ſown in autumn, the plants will flower early the following ſummer, ſo that there will be a certainty of good ſeeds. They may be ſown in any ſituation, and will require no other culture, but to keep them clean from weeds, and thin the plants where they are too cloſe. There is a variety of this, which grows much taller; the heads alſo are larger, and the leaves are placed cloſer upon the ſtalks. It was found by Tournefort in the Levant.

4. The ſeeds of this are never perfected in England, it is increaſed therefore by parting the roots. The beſt time for this is the beginning of march. It ſhould have a dry ſoil and a warm ſituation; otherwiſe it will be liable to be deſtroyed in ſevere winters.

5. This ſort may be increaſed by parting the roots in autumn, when the leaves decay. In a light ſoil it will endure the cold of our winters, and continue many years. It may alſo be propagated by ſeeds, which ripen here in dry ſeaſons.

7. Is difficult to propagate in England, the roots not putting out offſets, and the ſeeds ripening only in warm dry ſeaſons. It requires a dry ſoil and warm ſituation.

8. The ſeeds not ripening in this country, this ſort can only be increaſed by ſide ſhoots ſlipped from the branches in the ſpring, planted in pots filled with light ſandy earth, and plunged into a moderate hot-bed, obſerving to ſhade them till they have taken root: then they muſt be gradually hardened and removed into the open air, and when they have obtained ſtrength, ſome may be planted in a warm dry border, where they will endure the cold of our ordinary winters; but in ſevere froſt they are frequently deſtroyed, and therefore a plant or two ſhould be potted and ſheltered in winter.

10. This ſeldom perfects ſeeds in England, and therefore is increaſed by parting the roots in the ſpring. In a light ſoil and warm ſituation it will live abroad in common winters, but in ſevere froſt it is ſometimes deſtroyed.

CARTHAMUS. See *Atractylis*.

CARUA. See *Juſticia*.

CARUI. See *Carum*, *Seſeli*, *Siſon*.

CARUIFOLIA. See *Selinum*.

CARUM. (*So named from Caria, a province of Aſia.* Καρος, *Dioſcor.*)

Engl. *Caraway.* Fr. *Carvi.*

*Lin. gen. n.* 365. *Reich.* 395. *Schreb.* 497. *Juſſ.* 219. *Gærtn. t.* 23. Carui. *Tourn.* 160.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Umbellatæ*, or *Umbelliferæ*.

GENERIC CHARACTER.

CAL. *Umbel univerſal* long; *rays* ten, frequently unequal; *umbel partial* crowded.

*Involucre univerſal* often monophyllous; *partial* none. *Perianth* ſcarcely manifeſt.

COR. univerſal uniform. Florets of the diſk abortive. *Proper* unequal. *Petals* five, unequal, obtuſe, carinated, inflex-emarginate.

STAM. *Filaments* five, capillary, length of the corolla, caducous. *Antheræ* roundiſh, very ſmall.

PIST.

PIST. *Germ* inferior. *Styles* two, very small. *Stigmas* simple.
PER. none. *Fruit* ovate-oblong, ſtriated, bipartile.
SEEDS two, convex on one ſide, ovate-oblong, ſtriated, flat on the other ſide.
OBS. *Some of the floſcules in the diſk are neutral.*

ESSENTIAL CHARACTER.

*Fruit* ovate-oblong, ſtriated. *Involucre* one-leaſed, *Pericarp* keeled, inflex-emarginate.

SPECIES.

1. Carum Carui. *Common Caraway.*
*Lin. ſpec.* 378. *Retzius.* 1. 722. *fl. lapp. n.* 105. *ſuec. n.* 260. *mat. med.* 85. *Hudſ. angl.* 126. *Wither. arr.* 312. *Relh. cant. n.* 240. *Hall. helv. n.* 789. *Pollich pal. n.* 304. *Jacqu. auſtr. 4. t.* 393. *Krock. ſileſ. n.* 465. *Gærtn. fruct.* 1. 106. *Woodv. med. bot.* 125. *t.* 45. *Plenck, ic. t.* 214. *Blackw. herb. t.* 529. *Rivin. pent. t.* 55. *Fl. ruſſ. t.* 55. *Dod. pempt.* 299. 2. *Camer. epit.* 516. *Lob. ic.* 1. 724. 1. *Ger. herb.* 879. *emac.* 1034. *Park. theat.* 910. *Mor. hiſt. ſ.* 9. *t.* 9. *f.* 1. *umb. t.* 8. *Raii hiſt.* 446. *ſyn.* 213.
Apium Carui. *Crantz. auſtr.* 218. *umb.* 101.
Seſeli Carum. *Scop. carn. n.* 361. *Villars dauph.* 2. 589.
Cuminum pratenſe, Carui offic. *Bauh. pin.* 158.
β. C. hiſpanicum. *Spaniſh Caraway.*
*Mill. dict. n.* 2.

DESCRIPTION, *&c.*

Caraway is a biennial plant. It has a taper root like a Parſnep, but much ſmaller, running deep into the ground, ſending out many ſmall fibres, and having a ſtrong aromatic taſte. The whole plant is ſmooth. Stems ſolid, channelled, from eighteen inches to two feet and upwards in height, with ſpreading branches. Leaves decompound, long and narrow, on long petioles; leaflets in fixes, in a ſort of whorl, two of them longer; ſegments terminating in a reddiſh ſemitranſparent ſubſtance [a]. Univerſal involucre generally one-leaſed, as Linneus deſcribes it; but it has ſometimes as far as five caducous leaflets. Rays of the umbel from nine to twelve. Some umbellules have twenty flowers, white or tinged with red: ſome of them neutral, according to Linneus, but all fertile, as Dr. Withering affirms.

It grows naturally in rich meadows in Lincolnſhire, in Yorkſhire near Hull, in Norfolk, near Cambridge, Bury, *&c.* and is cultivated in ſome counties, particularly Eſſex. It flowers in may and june, and the ſeeds ripen in autumn.

Parkinſon ſays, the young roots are better eating than Parſneps. The tender leaves in the ſpring are boiled in ſoup. The ſeeds, it is well known, are much uſed in cakes, and incruſted with ſugar for comfits; they are diſtilled alſo with ſpirituous liquors for their flavour. They were formerly recommended by Dioſcorides for pale-faced girls; and in more modern days their uſe in that caſe is not forgotten. They are no deſpicable remedy in tertian agues. They abound with an eſſential oil, which is anti-ſpaſmodic and carminative.

Lewis ſays, that about one ounce in thirty of eſſential oil ariſes from the ſeeds in diſtillation, that it is of a bright yellow colour, hotter and more pungent to the taſte than what is obtained from moſt other warm ſeeds, that it is given from one to five drops as a carminative, and is ſuppoſed to be of peculiar efficacy in promoting urine. The herb affords a ſimilar oil, but ſixteen pounds of the herb in flower, ſtripped from the ſtalks, yield ſcarcely an ounce.

This is one of the eſſential oils of the London and Edinburgh Diſpenſatories. It enters the compoſition of Electuary of Scammony. A diſtilled water of the ſeeds is there alſo directed. The ſeeds themſelves are an ingredient in compound ſpirit of Juniper, tincture of Senna, Confectio Opiata, and emplaſtrum Cumini.

According to Linneus's account, ſheep, goats, and ſwine eat this plant; but kine and horſes are not fond of it. Schreber on the contrary affirms, that it is an excellent food for kine. Dr. Anderſon recommends both the roots and tops for cattle in the ſpring.]

β. Spaniſh Caraway riſes with a ſtronger ſtalk, cloſely ſet with fine narrow leaves like thoſe of Dill, and dividing at top into many branches, each terminated by looſer umbels of white flowers, which are ſucceeded by larger broader ſeeds at Paris.

It grows naturally in Spain; the ſeeds were ſent to Mr. Miller from the royal garden.

PROPAGATION AND CULTURE.

The beſt ſeaſon for ſowing the ſeeds of Caraway is in autumn, ſoon after they are ripe, when they will more certainly grow, than thoſe ſown in the ſpring; and the plants which riſe in the autumn, generally flower the following ſeaſon, ſo that a ſummer's growth is hereby ſaved. When the plants come up, the ground ſhould be hoed to deſtroy the weeds; and where the plants are too cloſe, they muſt be thinned in the ſame manner as is practiſed for Carrots, leaving them three or four inches apart. In the following ſpring they will require to be twice more hoed, which will keep the ground clean till the ſeeds are ripe; then the ſtalks muſt be pulled up, and tied in bundles, ſetting them upright to dry, when the ſeeds may be threſhed out for uſe.

[The method of culture in Eſſex is, about the beginning of march to plough ſome old paſture land: if it has been paſture for a century the better; and the ſoil ſhould be a very ſtrong clayey loam. Twelve pounds of Caraway ſeed, are mixed with ten pounds of Coriander, and twelve pounds of Teaſel ſeed. This is ſufficient for one acre; and is ſowed directly after the plough, harrowing the land well. When the plants appear of ſufficient ſtrength to bear the hoe, which will not be until about ten weeks after ſowing, it muſt not be omitted; and in the courſe of the ſummer, the crop will require three hoeings, beſides one at michaelmas; each coſting about eight ſhillings an acre. The Coriander being annual, will be fit to cut about the beginning of july, and is reaped at four ſhillings the acre. It is left in the field after cutting, and threſhed by the day on a cloth, in the ſame manner as Rape ſeed. About april following the Caraway and Teaſel will want a good hoeing, done deep and well; and another about the beginning of june; theſe two hoeings are done at ſeven ſhillings the acre each. The Caraway will be fit to cut the beginning of july; and muſt be threſhed in the ſame manner as the Coriander. The Teaſel will not be ready till the middle of ſeptember. Some of the plants of Caraway and Teaſel do not perfect their ſeeds till the third or fourth year; though in general there is a crop the ſecond year, yet enough is left for a crop the third year: and the ſeeds that are ſcattered from the crop the ſecond year often come to perfection the fourth: and there are inſtances of its being continued for ſeven years. The uſual way however is to plough directly after the crop is gathered the third year, and to ſow Wheat, of which commonly a very good crop is obtained, the land being in fine order, from the rotting of the turf, and repeated hoeings.

The produce of Caraway, on the very rich old lays in the hundreds, or low lands of Eſſex, has often been twenty hundred weight to the acre. There is always a demand for the ſeed in the London market; where it is ſometimes ſo low as twelve ſhillings the hundred weight, and has been up to fifty ſhillings; but it is moſtly on an average at twenty-one ſhillings. The land can only be filled with plants; and the more one predominates, the leſs muſt reaſonably be expected of the others. This compound crop is moſtly ſown on land ſo ſtrong, as to require being a little exhauſted, to make it fit for corn. Caraway and Coriander are oftenеſt ſown without Teaſel; the latter being a troubleſome and uncertain

[a] Withering. [b] Ibid.

uncertain crop, and the produce of Caraway much greater without it*.

Caraway has been long cultivated in the county of Eſſex. Mr. Houghton, at the end of the laſt century, ſays that "although Caraway-ſeed be ſcarce "now, yet not many years ſince a friend of mine "near Colcheſter produced ſo much, that it was "ſold for two-pence, and I believe leſs, the pound. "I am afraid his great quantity did him damage, "however I believe 'tis made now one of the ſtaple "pieces of huſbandry*."

CARUM. See *Siſon*.

——— Bunius. See *Æthuſa*.]

[CARYOCAR. (*From* καρυον or καρυου, *a nut, and* καρη, *the head.*)

*Lin. gen. Reich. n.* 739. *Schreb.* 931. *Juſſ.* 435. Auth. D. Allamand.

Claſſ. 13. 4. Polyandria Tetragynia.

GENERIC CHARACTER.

CAL. *Perianth* quinquepartite, coloured; *diviſions* obtuſe, concave, deciduous.

COR. *Petals* five, oval, concave, large.

STAM. *Filaments* numerous, filiform. *Authers* oblong.

PIST. *Germ* globoſe. *Styles* four, (ſometimes fewer.) *Stigmas* obtuſe.

PER. *Drupe* fleſhy, ſpherical, very large.

SEED. *Nuts* four (one to four), oval-triquetrous, reticulated with furrows, angulated with a ſuture on one ſide.

ESSENTIAL CHARACTER.

*Cal.* five-parted. *Petals* five. *Styles* uſually four. *Drupe* with four nuts, reticulated with furrows.

SPECIES.

1. Caryocar nuciferum.

*Lin. ſyſt.* 504. *Reich.* 2. 618. *mant.* 247.

DESCRIPTION, *&c.*

A tall tree, with ternate leaves. Calyx o-rolla purple. Drupe the ſize of the human head. Nuts eſculent, having the taſte of Almonds*.—Native of Berbices and Eſſequebo.

CARYOPHYLLASTER. See *Dodonæa*.

CARYOPHYLLATA. See *Anemone*, *Geum*, and *Dryas*.

CARYOPHYLLO AFFINIS. See *Dianthus*.

CARYOPHYLLUM. See *Sarracenia*.]

CARYOPHYLLUS. (καρυου φυλλον, *nut-leaf.*)

Engl. *Clove-tree*. Fr. *Giroflier*.——The fruit is named in *Engl.* Clove. *Fr.* Clou. *Ital.* Chiodi. *Span.* Clavo. *Dutch*, Naghel—from the ſimilitude of it to a nail.

*Lin. gen. n.* 669. *Reich.* 727. *Schreb.* 848. *Juſſ.* 324. *Gærtn. t.* 33. Caryophyllus aromaticus. *Tourn.* 432. Caryophyllodendron. *Vaill. A. G.* 1722.

Claſſ. 13. 1. Polyandria Monogynia.

Nat. order of *Heſperideæ*. *Myrti* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth of the fruit* ſuperior, quadripartite, acute, ſmall, permanent.

*Perianth of the flower* ſuperior, tetraphyllous; *leaflets* roundiſh, concave, deciduous.

COR. *Petals* four, roundiſh, crenate, ſmaller than the calyx of the flower.

STAM. *Filaments* numerous, capillary. *Authers* ſimple.

PIST. *Germ* inferior, oblong, large, terminating in the calyx of the fruit. *Style* ſimple, inſerted into the quadrangular receptacle. *Stigma* ſimple.

PER. oval, unilocular, terminated by the hardened converging calyx of the fruit, umbilicate.

SEED ſingle, oval, large.

ESSENTIAL CHARACTER.

*Cor.* four-petalled. *Cal.* four-leaved, duplicate. *Berry* one-ſeeded, inferior.

SPECIES.

1. Caryophyllus aromaticus. *Clove-tree.*

*Lin. ſpec.* 735. *ſyſt.* 496. *Reich.* 2. 590. *hort. cliff.* 207. *mat. med.* 136. *Gærtn. fruct.* 1. 167. *Woodv. med. bot.* 366. *t.* 135. *Lour. cochinch.* 333. *Blackw. t.* 338. *Pluk. alm. t.* 155. *f.* 1. *Cluſ. exot.* 16. *Rumph. amb.* 2. *t.* 1, 2, 3. *Sonn. guin.* 196. *t.* 197. *Bauh. pin.* 410. *Raii hiſt.* 1508. *Ger.* 1351. *emac.* 1535. *Park. theat.* 1577. *Piſ. mant.* 177.

DESCRIPTION, *&c.*

According to Mr. Miller, this tree riſes to the height of a common Apple-tree, but the trunk generally divides at about four or five feet from the ground into three or four large limbs, which grow erect, and are covered with a thin ſmooth bark, which adheres cloſely to the wood. Theſe limbs divide into many ſmall branches, which form a ſort of conical figure; the leaves are like thoſe of the Bay-tree, and are placed oppoſite on the branches. The flowers are produced in looſe bunches at the end of the branches; are ſmall, white, and have a great number of ſtamens, which are much longer than the petals. The flowers are ſucceeded by oval berries, which are crowned with the calyx, divided into four parts, and ſpreading flat on the top of the fruit; it is the young fruit beaten from the trees before they are half grown, which are the Cloves uſed all over Europe.

[Monſ. Sonnerat deſcribes the Clove ſhrub as of a pyramidal form. Leaves oppoſite, pointed at each end, ſmooth, and waving on the edge, on a petiole an inch in length, and red; this petiole is the moſt aromatic part of the whole ſhrub, not excepting even the Clove. The flowers grow in a cyme (par bouquet) at the ends of the branches. Petals blueiſh, veined with white, rounded at the end and concave. Fruit reddiſh, and incloſing commonly two ſeeds. The whole ſhrub is aromatic, and does not ſucceed except in moiſt ſituations.

It is not confined to Banda and Amboina, but is found in all the Moluccas, in many of the South Sea iſlands, New Guinea, and the neighbouring iſles, *&c.*

Father Loureiro deſcribes it as a middle-ſized tree, with few aſcending branches. Leaves broad-lanceolate, quite entire, ſmooth, oppoſite, petioled. Flowers white, on many-flowered, regular, upright, terminating peduncles. Calyx tubular, oblong, four-cleft, the ſegments acute, ſhort, ſomewhat upright. Petals roundiſh, concave, ſmall. Stamens inſerted into the receptacle, longer than the corolla. Pericarp a calycine berry, ovate-oblong, corticoſe, pale brown, containing one ſeed, and crowned with the ſegment of the calyx.

This grows wild in Cochinchina, and has ſcarcely any ſmell or taſte; but it ſeems to agree in botanical characters with the true Clove.

Gærtner deſcribes the calyx as four-toothed. Stamens as many as two hundred, diſpoſed in four phalanxes, and inſerted into a quadrangular fleſhy vallum cloſe to the teeth of the calyx. The immature germ (which is what we have in Europe as a ſpice) is two-celled, and in each cell there are twenty ovula fixed to the middle partition. The ripe berry (Anthophyllus, offic.) is inferior, coriaceous, umbilicated with a quadrangular vallum within the teeth of the permanent calyx, of an elliptic-ſphæroidal form, one-celled or two-celled. There is a ſingle ſeed in each cell, of the ſame ſhape with the cavity, therefore either ovate-cylindric or half-ovate, two-lobed, without any albumen.]

There are no plants of the Clove-tree in the gardens either of England or Holland. The Dutch have been ever jealous of other nations partaking with them in the ſpice trade; they will not therefore permit the trees to be removed from the iſlands where they grow naturally; nor will they ſuffer them, as far as they can prevent it, to grow in the uninhabited iſlands. [Captain Roſy told Dampier, that he was ſent on purpoſe to cut them down, and that he did actually at ſeveral times cut down ſeven or eight hundred trees. Yet, ſays Dampier, there are many uninhabited iſlands that have great plenty of them.

Notwithſtanding the extreme caution of the Dutch this valuable tree has been ſome time in the hands of the French at Cayenne and elſewhere. It is alſo

* Sewell in Young's Annals, vol. 21. p. 53. &c.
* Collect. 2. 462. * Allamand.

in the botanic garden in our iſland of St. Vincent and has been ſent thence to Barbadoes (1794) by Mr. Alexander Anderſon, the ſuperintendant.

The Clove is conſidered as one of the hotteſt and moſt acrid ſubſtances of the aromatic claſs, and as ſuch is often uſed, not only internally, but externally, as a ſtimulant; as in paralytic caſes for example, in which the oil of Cloves has been adminiſtered to advantage: it is alſo made uſe of in the tooth-ach, in which it often ſucceeds in ſuddenly abating and ſubduing the pain. A tincture of Cloves in rectified ſpirit is kept in the ſhops, as well as the eſſential oil, which latter is perhaps ſeldom free from ſophiſtication. For culinary purpoſes the uſes of Cloves are innumerable.

CARYOPHYLLUS. See *Aphyllanthes, Arenaria, Ceraſtium, Cucubalus, Gypſophila, Holoſteum, Hypericum, Jaſtabalifera, Lychnis, Myrtus, Silene, Statice, Stellaria, Vaccaria.*

[CARYOTA. (Καρυωτης, *or* καρυωτις, *Dioſc.* καρυωτα, *gum*; *a nut-bearing Palm.*)

*Lin. gen. n.* 1228. *Reich.* 1343. *Schreb.* 1701. *Juſſ.* 38. *Gærtn. t.* 7. *Muſ. cliff.* 12. Schunda-pana.

Claſſ. Appendix, Palmæ. (Monoecia Polyandria.)

Nat. order of *Palmæ.*

GENERIC CHARACTER.

* *Male flowers.*

CAL. *Spathe* univerſal, compound. *Spadix* ramoſe.

COR. tripartite. *Petals* lanceolate, concave.

STAM. *Filaments* very numerous, almoſt longer than the corolla. *Anthers* linear.

* *Female flowers*, in the ſame ſpadix with the males.

CAL. common with the males.

COR. tripartite. *Petals* acuminate, very ſmall.

PIST. *Germ* roundiſh. *Style* acuminate. *Stigma* ſimple.

PER. *Berry* roundiſh, unilocular.

SEEDS two, large, oblong, roundiſh on one ſide, flat on the other.

ESSENTIAL CHARACTER.

MALE. *Cal.* common. *Cor.* tripartite. *Stamens* very many.

FEMALE. *Cal.* as in the male. *Cor.* tripartite. *Piſt.* one. *Berry* diſpermous.

SPECIES.

1. Caryota urens.

*Lin. ſpec.* 1660. *ſyſt.* 986. *Reich.* 4. 637. *ſyſt. zeyl.* 396. *Thunb. act. ſtockh.* 1782. *p.* 286. *Gærtn. fruct.* 1. 20. *Burm. ind.* 241.

Palma indica fol. bicompoſito, fr. racemoſo. *Raii hiſt.* 1365. *Burm. zeyl.* 180.

Schunda-pana. *Rheed. mal.* 1. 15. *t.* 11.

Seguaſter major. *Rumph. amb.* 1. 64. *t.* 14.

*Fronds bipinnate, leaflets ſeſſile, berry two-ſeeded.*

2. Caryota mitis.

*Lour. cochinch.* 569.

*Fronds bipinnate, petioles of the leaflets nodding, berries one-ſeeded.*

DESCRIPTIONS, *&c.*

1. This Palm becomes a lofty tree. The trunk is frequently ſo large as ſcarcely to be embraced by two men: it is covered with a ſort of cinereous cruſt, which is quite ſmooth. The branches (or fronds) are produced regularly from the top of the trunk, all round it, in a decuſſated order and in pairs. The leaves (or leaflets) are oppoſite, oblong, triangular, rigid, ſmooth, ſhining, browniſh green, with ſtrong nerves, and folding like a fan. The flowers are in long pendulous ſpikes, on which they grow in pairs. The corolla, which is ſometimes bipartite, but commonly tripartite, is at firſt green, then red or purple, and finally yellow[a].

The fruit is a ſucculent, globular berry, a little flatted, terminated by a triangular twin ſtigma[b]: at firſt it is hard and green, next yellow, then red, and when quite ripe dark red (almoſt black) and ſhining; the rind is thin, and the pulp is ſoft and red, very ſharp and acrid[c]. Within are two ſtones or ſeeds (ſometimes only one) hard, roundiſh or oblong, convex on one ſide, flat on the other, wrinkled: they are of a dark red or blackiſh colour on the outſide[d].

In the iſland of Ceylon this tree is known by the name of *Kettule*. Knox deſcribes it as growing ſtraight, but not ſo tall or big as a Cocoa-nut tree: the inſide nothing but a white pith. It yields a ſort of liquor, which the inhabitants call *Tellegie*, ſweet and pleaſing to the palate, wholſome, and no ſtronger than water. It is taken from the tree twice, and from ſome good trees thrice, in a day. An ordinary tree will yield three or four gallons. They boil this liquor, and thus make a kind of brown ſugar of it, called *Jaggory*; but with ſkill, they can make it as white as the ſecond beſt ſugar. When the tree is come to maturity, there comes out a bud from the top, which if it be ſuffered to grow will bear the fruit, but this is only ſet to ſet for increaſe. This bud they cut and prepare, by putting ſalt, pepper, lemons, garlick, leaves, *&c.* which keep it from ripening. They daily cut off a thin ſlice from the end, and the liquor drops into a veſſel, which they ſet to catch it.

It bears a leaf like that of the Betel-nut tree, which is faſtened to a ſkin as that is, only this ſkin is hard and ſtubborn like a piece of board: the ſkin is all full of ſtrings as ſtrong as wire, and they are uſed for making ropes. So long as the tree is growing the leaves ſhed, but when it is come to its full growth, they remain many years before they fall, but then no new ones come again. As the top bud withers, other buds come out lower and lower every year, till they come to the bottom of the boughs, and then having done bearing may ſtand ſeven or ten years, when it dies.

The wood is not above three inches thick, very ſtrong and hard, but apt to ſplit. Being very heavy, they make peſtles of it to beat their rice with. The colour is black, but it looks as if it were compoſed of ſeveral pieces. The buds, like thoſe of the Cocoa and Betel-nut tree, are excellent in taſte, reſembling Walnuts or Almonds[e].

2. The trunk of this Palm is fifteen feet high, two inches thick, very ſtraight and regular. Fronds four feet long, reclining, on roundiſh, unarmed ſtipes: the leaflets are wedge-ſhaped, many-nerved, obliquely præmorſe, on long, ſlender petioles. Spathe ſimple, oblong, ſubacute. Spadix branch-ſpiked, reflex: ſpikes ſeveral, ſimple, long: flowers regularly diſpoſed, with ſingle females between pairs of males. The latter have a perianth of three obtuſe, concave leaflets, a corolla of three conic, curved, erect, almoſt cloſed petals: no filaments, but very numerous, linear anthers: the females have a five-leaved, imbricate, permanent perianth, the leaflets blunt and concave: the corolla as in the male: the germ three-cornered and ſuperior, without any ſtyle, but an acute, bifid ſtigma. The berry is round, coriaceous, ſmooth, black, the ſize of a muſket-bullet; containing one, globular, pale, oſſified ſeed. It is not eatable, but neither that nor the plant occaſion an itching, as the other ſort does. It is a moſt beautiful Palm, and grows in the woods of Cochinchina[f].

CASCARILLA. See *Croton.*

CASCHOU. See *Anacardium.*

CASPARIA. See *Samyda.*

CASSIA. See *Nitraria* and *Offeris.*

CASSADA or CASSAVA. See *Iatropha.*]

CASSIA. (Κασσια, *Dioſc. Derivation uncertain.*)

*Lin. gen. n.* 514. *Reich.* 557. *Schreb.* 700. *Juſſ.* 348. *Gærtn. t.* 147. *Fourn.* 392. Senna. *Tourn.* 390. *Mill. dict. Gærtn. t.* 146.

Claſſ. 10. 1. Decandria Monogynia.

Nat. order of *Lomentaceæ. Leguminoſæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* pentaphyllous, (quinquepartite, *G.*) lax, concave, coloured, deciduous.

[a] Hort. malab. [b] Gærtner. [c] Hort. malab. [d] Gærtner. and Gærtner. [e] Hiſt. of Ceylon, p. 15. [f] Loureiro.

Cor. *Petals* five, roundiſh, concave; the inferior ones more diſtant, more ſpreading, larger.
Stam. *Filaments* ten, declined; the three inferior ones longer; the three ſuperior ſhorter. *Anthers* the three inferior very large, arcuate, roſtrate, gaping at the tip; the four lateral ones without the roſtrum, gaping; the three ſuperior ones very ſmall, ſterile.
Pist. *Germ* ſubcolumnar, long, pedunculed. *Style* very ſhort. *Stigma* obtuſe, aſcending.
Per. *Legume* oblong, partitions tranſverſe.
Seeds many, roundiſh, affixed to the ſuperior future.
Obs. In Caſſia T. *the legume is oblong with entire partitions.*
In Senna T. *the legume is gibbous, and inflex.*

ESSENTIAL CHARACTER.

*Calyx* pentaphyllous. *Petals* five; the three ſuperior *anthers* ſterile; the three inferior beaked. *Legume.*

SPECIES.

[1. Caſſia diphylla. *Two-leaved Caſſia.*
*Lin. ſpec.* 537. *Reich.* 2. 249.
*Leaves conjugate, ſtipules cordate-lanceolate.*
2. Caſſia bacillaris.
*Lin. ſyſt.* 393. *ſuppl.* 231.
*Leaflets two pairs ovate oblique, an obtuſe gland between the loweſt, racemes axillary peduncled, ſiliqua round long.*
3. Caſſia Abſus. *Four-leaved Caſſia.*
*Lin. ſpec.* 537. *ſyſt.* 393. *Reich.* 2. 249. *fl. zeyl. n.* 153.
Senna. *Burm. zeyl.* 212. *t.* 97. *Plak. alm. t.* 60. *f.* 1.
Abſus. *Alp. egypt.* 97. *Bauh. hiſt.* 2. 361. *Raii hiſt.* 922. 1.
*Leaflets two pairs obovate, glands two ſubulate between the loweſt.*
4. Caſſia viminea. *Weakly Senna-ſhrub,* or *twiggy Caſſia.*
*Lin. ſpec.* 537. *Reich.* 2. 249. *amæn.* 5. 397. *Loeſl. it.* 232. *Brown. jam.* 223. *n.* 8. *Sloan. jam.* 2. 49. *t.* 189. *f.* 6, 7. *Swartz obſ.* 156.
*Leaflets two pairs ovate-oblong, acuminate, an oblong gland between the loweſt, ſpines ſubpetioled abſolete three-toothed.*
5. Caſſia Tagera.
*Lin. ſpec.* 538. *Reich.* 2. 249.
*Leaflets three pairs, gland petiolar, ſtipules ciliated cordate acuminate.]*
6. Caſſia Tora. *Oval-leaved Caſſia,* or *wild Senna.*
*Lin. ſpec.* 538. *Reich.* 2. 250. *vaur.* 378. *fl. zeyl. n.* 152. *Lour. cochinch.* 263. *Mill. fig. t.* 82. *Dill. elth.* 72. *t.* 63. *f.* 73.
C. Pentagonia. *Mill. dict. n.* 18.
β. *Herm. lugdb.* 557. *Raii hiſt.* 1743. (Senna) & 911. 2. (Galega).
*Leaflets three pairs obovate, the outer ones larger, a ſubulate gland between the lower.*
7. Caſſia bicapſularis. *Six-leaved Caſſia.*
*Lin. ſpec.* 538. *Reich.* 2. 250. *Merian. ſur. t.* 32. *Plum. ſpec.* 18. *t.* 76. *f.* 1.
*Leaflets three pairs obovate ſmooth, the interior ones rounder and leſs, a globular gland interpoſed.*
8. Caſſia emarginata.
*Lin. ſpec.* 538. *Reich.* 2. 251. *Swartz obſ.* 157. *Brown. jam.* 223. 3. *Sloan. jam.* 2. 44. *t.* 180. *f.* 1—4. *Raii dendr.* 110. 1.
C. racemoſa. *Mill. dict. n.* 19.
*Leaflets three or four pairs ovate almoſt entire, flowers in racemes irregular, ſtem arborescent.*
[9. Caſſia obtuſifolia. *Round-leaved Caſſia.*
*Lin. ſpec.* 539. *Reich.* 2. 251. *Dill. elth.* 71. *t.* 62. *f.* 72. *Sloan. jam.* 2. 47. *t.* 180. *f.* 5? Senna. *Swartz obſ.* 158. *Lour. cochinch.* 263?
*Leaflets three pairs obovate, blunt.*
10. Caſſia falcata. *Sickle-leaved Caſſia.*
*Lin. ſpec.* 539. *Reich.* 2. 251. *hort. cliff.* 159.
*Leaflets four pairs ovate-lanceolate back-ſickled, a gland at the baſe of the petioles.*
11. Caſſia longiſiliqua. *Long-podded Caſſia.*
*Lin. ſyſt.* 393. *ſuppl.* 230.
*Leaflets four pairs, the outmoſt lanceolate, a ſubulate gland below the innerſt and between the outmoſt.]*
12. Caſſia occidentalis. *Occidental Caſſia.*
*Lin. ſpec.* 539. *ſyſt.* 393. *Reich.* 2. 251. *Swartz obſ.* 159. *Brown. jam.* 224. 10. *Comm. hort.* 1. 51. *t.* 26. (Senna). *Sloan. jam.* 2. *t.* 178. *f.* 3, 4.
*Leaflets five pairs ovate-lanceolate ſcabrous about the edge, the outer ones larger, a gland at the baſe of the petioles.*
[13. Caſſia planiſiliqua.
*Lin. ſpec.* 540. *Reich.* 2. 252. *Roy. lugdb.* 468. 11. *Plum. ſpec.* 18. *t.* 77.
*Leaflets five pairs ovate-lanceolate ſmooth, a gland at the baſe of the petioles.]*
14. Caſſia Piſtula. *Alexandrian purging Caſſia, Caſſia-ſtick Tree,* or *Pudding Pipe Tree.*
*Lin. ſpec.* 540. *ſyſt.* 393. *Reich.* 2. 252. *fl. zeyl. n.* 149. *mat. med.* 111. *Pluenk, ic. t.* 327. *Woodv. med. bot.* 449. *t.* 163. *Swartz obſ.* 159. *Gærtn.* 2. 313. *Blackw. t.* 381. *Comm. hort.* 1. 215. *t.* 110. *Rumph. amb.* 2. 83. *t.* 21. *Lour. cochinch.* 264. *Raii hiſt.* 1746. *Alp. ægypt.* 3. 1. 1. *Sloan. jam.* 2. 42. *Brown. jam.* 222. 1.
Conna. *Rheed. mal.* 1. 37. *t.* 22.
*Leaflets five pairs ovate-acuminate ſmooth, petioles without glands.*
[15. Caſſia atomaria.
*Lin. ſyſt.* 393. *Reich.* 2. 252. *mant.* 68.
*Leaflets five pairs ovate ſubtomentoſe, petioles round without glands.*
16. Caſſia piloſa.
*Lin. ſpec.* 540. *ſyſt.* 393. *Reich.* 2. 252. *Brown. jam.* 224. 12. *Swartz obſ.* 160.
*Leaflets four or five pairs with very minute glands, ſtipules ſemicordate acuminate, ſtem ſtiff hairy.]*
17. Caſſia Senna. *Egyptian Caſſia* or *Senna.*
*Lin. ſpec.* 539. & 1681. *ſyſt.* 393. *Reich.* 2. 253. *mat. med.* 110. *Woodv. med. bot.* 446. *t.* 162. *Plenck, ic. t.* 326. *Swartz obſ.* 161.
Senna alexandrina. *Bauh. pin.* 397. *Dod. pempt.* 361. *Mor. hiſt.* 2. 201. *ſ.* 2. *t.* 24. *f.* 1. *Mill. dict. n.* 1. *Raii hiſt.* 1742. *Regnault bot.* 388. fig. —officinalis. *Gærtn. fruct.* 2. 312.
β. Senna italica. *Bauh. pin.* 397. *Mor.* 260. *ſ.* 2. *Mill. dict. n.* 2. *Park. theat.* 225. *Sloan. jam.* 2. 47.
*Leaflets four to ſix pairs ſubovate, petioles without glands.*
18. Caſſia biflora. *Two-flowered Caſſia.*
*Lin. ſpec.* 540. *Reich.* 2. 253. *hort. cliff.* 159. *amæn.* 5. 397. *Brown. jam.* 223. *n.* 6. *Plum. ſpec.* 18. *ic.* 78. *f.* 1.
*Leaflets ſix pairs rather oblong ſmooth, the lower ones ſmaller, a ſubulate gland between the loweſt, pedicels two-flowered.*
[19. Caſſia rufciſolia.
*Lin. ſyſt.* 394. *Jacqu. collect.* 1. 43. *icon. rar.* 1. 71.
*Leaflets ſix pairs, lanceolate acute ſmooth, a gland above the baſe of the petiole, flowers racemed.*
20. Caſſia hirſuta.
*Lin. ſpec.* 540. *Reich.* 2. 253. *hort. cliff.* 159. *Herm. lugdb.* 556.
*Leaflets ſix pairs broad-ovate acuminate woolly.*
21. Caſſia multiglandulofa. *Glandulous Caſſia.*
*Lin. ſyſt.* 394. *Jacqu. collect.* 1. 42. *icon. rar.* 1. 72. *Ait. hort. kew.* 52.
*Leaflets ſix pairs, villoſe beneath and about the edges, obtuſe; a gland between each pair of leaflets.*
22. Caſſia tomentoſa.
*Lin. ſyſt.* 394. *ſuppl.* 231.
*Leaflets ſix or eight pairs linear obliquely rounded at the baſe, rough with hairs on the upper ſurface, panicles axillary, legumes villoſe.*
23. Caſſia ſerpens.
*Lin. ſpec.* 541. *Reich.* 2. 254. *Swartz obſ.* 161. *Brown. jam.* 225. *n.* 11. *Sloan. jam.* 2. 5.
*Leaflets ſeven pairs, flowers pentandrous, ſtem ſubſarmentoſe procumbent herbaceous.]*

24. Caſſia liguſtrina. *Privet-leaved Caſſia.*
*Lin. ſpec.* 541. & 1681. *ſyſt.* 394. *Reich.* 2. 254. *mant.* 378. *Gron. virg.* 47, 65. *Dill. elth.* 350. *t.* 259. *f.* 338. *Mart. dec.* 3. *t.* 21.
C. bahamenſis. *Mill. dict. n.* 9.
C. liguſtrina. *Mill. dict. n.* 12.
*Leaflets ſeven pairs lanceolate, the outmoſt ſmaller, a gland at the baſe of the petioles.*
25. Caſſia alata. *Broad-leaved Caſſia.*
*Lin. ſpec.* 541. *Reich.* 2. 254. *mant.* 378. *hort. cliff.* 158. *Swartz obſ.* 162. *Mer. ſurin. t.* 58. *Rumph. amb.* 7. 35. *t.* 18. *Brown. jam.* 224. 9.
*Leaflets eight pairs oval-oblong, the loweſt ſmaller, petioles without glands, ſtipules ſpreading.*
26. Caſſia marilandica. *Maryland Caſſia.*
*Lin. ſpec.* 541. *Reich.* 2. 255. *Dill. elth.* 351. *t.* 260. *f.* 339. *Mart. cent. t.* 23.
*Leaflets eight pairs ovate-oblong equal, a gland at the baſe of the petioles.*
27. Caſſia tenuiſſima.
*Lin. ſpec.* 541. *Reich.* 2. 255.
Senna ſpuria fruteſcens, ſiliquis tenuiſſimis. *Houſt. M. S.*
*Leaflets nine pairs oblong, a ſubulate gland between the loweſt.*
28. Caſſia Sophera.
*Lin. ſpec.* 542. *Reich.* 2. 255. *fl. zeyl. n.* 150. *Lour. cochinch.* 264. *Burm. zeyl.* 213. *t.* 98. (Senna). *Rumph. amb.* 5. 283. *t.* 97. *f.* 1. (Gallinaria). *Rheed. mal.* 2. 101. *t.* 52. (Ponnam-Tongera).
*Leaflets ten pairs lanceolate, an oblong gland at the baſe.*
29. Caſſia bracteata.
*Lin. ſyſt.* 392. *ſuppl.* 232.
*Leaflets ten pairs oblong obtuſe without glands, racemes elongated, bractes ovate ſwelling imbricate, legume quadrangular compreſſed.*
30. Caſſia auriculata. *Eared Caſſia.*
*Lin. ſpec.* 542. *Reich.* 2. 255. *fl. zeyl. n.* 151.
Senna ſpuria maderaſpatana, &c. *Pluk. alm. t.* 314. *f.* 4. *Raii dendr.* 110.
*Leaflets twelve pairs obtuſe mucronate, ſeveral ſubulate glands, ſtipules kidney-form bearded.*]
31. Caſſia javanica. *Java Caſſia.*
*Lin. ſpec.* 542. *Reich.* 2. 256. *Comm. hort.* 1. 217. *t.* 111.
*Leaflets twelve pairs oblong obtuſe ſmooth, no gland.*
[32. Caſſia grandis.
*Lin. ſyſt.* 394. *ſuppl.* 230.
*Leaflets twenty pairs, ſomewhat ſilky, without glands.*]
33. Caſſia Chamæriſta. *Dwarf Caſſia.*
*Lin. ſpec.* 542. *Reich.* 2. 256. *Swartz obſ.* 164. *Gron. virg.* 47, 64. *Brown. jam.* 225. 13. *Comm. hort.* 1. 53. *t.* 37. *Curt. mag. t.* 107.
*Leaflets many pairs, a petiolar pedicelled gland, ſtipules enſiform.*
34. Caſſia glanduloſa.
*Lin. ſpec.* 542. *ſyſt.* 395. *Reich.* 2. 256. *Breyn. cent.* 64. *t.* 24. (Chamæriſta).
*Leaflets many pairs with many glands, ſtipules ſubulate.*
[35. Caſſia mimoſoides.
*Lin. ſpec.* 543. *Reich.* 2. 257. *fl. zeyl. n.* 154.
*Leaflets many pairs linear, an obſcure gland at the baſe of the petioles, ſtipules ſetaceous.*
36. Caſſia flexuoſa.
*Lin. ſpec.* 543. *Reich.* 2. 257.
not flexuoſa of Miller.
Senna ſpuria. *Herm. lugdb.* 558. *Raii dendr.* 111. 7.
Chamæriſta. *Breyn. cent.* 65. *t.* 23.
*Leaflets many pairs, ſtipules half-cordate.*
37. Caſſia nictitans.
*Lin. ſpec.* 543. *Reich.* 2. 257. *hort. cliff.* 497. *t.* 36.
Senna ſpuria. *Pluk. alm. t.* 314. *f.* 5.
Amæna mæſta. *Rumph. amb.* 6. 147. *t.* 67. *f.* 1.
*Leaflets many pairs, flowers pentandrous, ſtem ſomewhat erect.*
38. Caſſia procumbens.
*Lin. ſpec.* 543. *Reich.* 2. 257. *Comm. petrop.* 12. 289. *Lour. cochinch.* 264.
not *procumbens* of Miller, n. 20. ſee *n* 44.



Chamæriſta mariana, fl. minore. *Pet. ſic.* 243. *n.* 40.
*Leaflets many pairs without glands, ſtem procumbent.*]

*Other ſpecies in Miller.*

39. Caſſia fruticoſa.
*Mill. dict. n.* 10. *Houſt. reliq. t.* 17. *Herb. Amm. in muſ. petrop.* 2. 601. *n.* 6.
*Leaflets two pairs ovate-lanceolate ſmooth, flowers terminal, pods long round, ſtem ſhrubby.*
40. Caſſia arborefcens.
*Mill. dict. n.* 15.
Senna ſpuria tetraphylla arborea, ſiliquis compreſſis anguſtis longiſſimis pendulis. *Houſt. M. S.*
*Leaflets two pairs oblong-ovate villoſe beneath, flowers corymbed, ſtem erect arboreous.*
41. Caſſia villoſa.
*Mill. dict. n.* 4.
S. ſp. arborea villoſa, fol. latis mucronatis, ſiliquis articulatis. *Houſt. M. S.*
*Leaflets three pairs oblong-ovate equal villoſe, pods jointed, ſtem erect arboreous.*
42. Caſſia uniflora.
*Mill. dict. n.* 5.
S. ſp. herbacea Orobi Pannonici fol. rotundioribus, fl. parvo, ſiliquis erectis. *Houſt. M. S.*
*Leaflets three pairs oblong-ovate equal villoſe, flowers ſolitary axillary, pods erect.*
43. Caſſia fruteſcens.
*Mill. dict. n.* 2.
S. ſp. americana frut., fol. mucronatis minoribus, fil. teretibus duplici ſeminum ordine ſætis. *Houſt. M. S.*
*Leaflets five pairs ovate ſmooth, the outer ones longer, ſtem ſhrubby.*
44. Caſſia tetraphylla.
C. procumbens. *Mill. dict. n.* 20.
S. ſp. tetr. herbacea proc., fil. hirſutis. *Houſt. M. S.*
*Leaflets two pairs ovate, flowers ſolitary axillary, ſiliques hirſute, ſtems procumbent.*
45. Caſſia minima.
C. biflora. *Mill. dict. n.* 14.
S. ſp. minima procumbens, foliorum pinnis ſubrotundis, caule pubeſcente. *Houſt. M. S.*
*Leaflets four pairs oblong-ovate, ſtems procumbent, flowers axillary, peduncles two-flowered.*

[*Species in Hortus Kewenſis*, and *Swartz.*

46. Caſſia patula. *Shining Caſſia.*
*Ait. hort. kew.* 51.
*Leaflets five pairs oblong ſharpiſh ſmooth, a gland at the baſe of the petioles, branches even.*
47. Caſſia ſtipulacea. *Large-ſtipuled Caſſia.*
*Ait. hort. kew.* 52.
Pſeudo-Acacia fol. mucronatis, fl. luteo. *Feuillée it.* 3. 56. *t.* 42.
*Leaflets about eight pairs ovate-lanceolate, a gland between the lower, ſtipules ovate very large.*
48. Caſſia frondoſa. *Smooth-leaved Caſſia.*
*Ait. hort. kew.* 53.
*Leaflets nine pairs oval-oblong ſmooth bluntiſh, a cylindric gland between the lower, petiole without any gland at the baſe.*
49. Caſſia fericea.
*Swartz prodr.* 66.
*Leaflets about four pairs ovate birſute, a ſubulate gland between the leaflets, peduncles four-flowered, legumes four-cornered.*
50. Caſſia lineata.
*Swartz prodr.* 66.
*Leaflets five pairs ſomewhat oblong pubeſcent beneath equal, an obſolete gland beneath the loweſt, peduncles one-flowered.*
51. Caſſia virgata.
*Swartz prodr.* 66.
*Leaflets ten pairs ovate-lanceolate villoſe, a petiolar pedicelled gland, peduncles one-flowered, longer than the leaves.*

DESCRIPTIONS, *&c.*

1. A ſhrub with a round ſtem. Two ſemiorbiculate obtuſe ſtriated leaves on a ſhort petiole. Stipules

pules covering the whole branches. Weſt-Indies. Annual [a]. Introduced into England 1781, by Mr. Francis Maſſon [b].

2. A ſhrub of twelve feet in height, and very ſmooth. Leaves alternate petiolate; leaflets very ſmooth on both ſides; the lower nicely ovate, the upper more elongated. No ſtipules. Racemes ſolitary few-flowered erect: pedicels hanging down angular. Flowers orange, of a middling ſize. Legume ſo like that of *C. Fiſtula* as not to be diſtinguiſhed from it, ſomewhat curved, cylindric, very ſmooth, ending in a ſiliform point, a foot long, intercepted within by partitions which do not appear outwardly. Native of Surinam: obſerved by Dalberg [c].

3. A hairy plant, with a ſlender ſtriated ſtem. Leaflets nearly equal. Racemes axillary few-flowered. Legumes one-celled hiſpid, with a few ſtiff hairs. Native of India, Ceylon, Egypt. Annual [d]. Introduced into England in 1777 by Patrick Ruſſell, M. D. [e]

4. Stem ſhrubby, climbing to the height of forty or fifty feet, ſtriated, ſtiff; branches divaricate, looſe, ſtiffiſh, round, ſtriated, ſmooth. Leaves bijugous: leaflets petioled, the lower pair ſpreading, bent down, the end one bent down perpendicularly and approximating, all entire, nerved, veined, very ſmooth. General petioles thickened at the baſe, round, uſually directed one way. Between the petioles of the lower pair is a linear oblong, erect, brown gland. On the adult and old branches there are ſpines. Racemes axillary, ſtiff, ſpreading, many-flowered, ſtriated. Flowers large, on peduncles longer than the flowers. Leaflets of the calyx ovate, reflex, ſpreading, ſmall, pale green. Petals unequal; the four upper ones ſmaller, ovate, with claws, the fifth lower, largiſh, concave. The three hinder filaments barren, ſix ſmaller, ſhort, fertile, the tenth larger, and bent down below the piſtil. Anthers oblong, beaked. Germ pedicelled, linear, longer than the corolla, bent down, and curved back: ſtyle ſubulate. Legume ſhort, compreſſed. Native of Jamaica, in the woods of the higher mountains in the interior of the iſland [f].

Introduced here in 1786, by Mr. Alexander Anderſon [g].

5. A ſmall procumbent ſhrub, with ſiliform branches. Petioles very ſhort. Folioles four ſemiorbiculate veined, the two outer larger. Stipules cordate or cordate-lanceolate, hairy at the edge. Native of India [h].

6. Stem erect, leſs woody, roughiſh, knotty from the ſcars of the leaves. Branches much expanding. Leaflets ending in a ſoft point: the lower ſhorter, more obtuſe. Stipules linear acuminate hairy. Glands acuminate, brown at the end, not between the outer pair, but between the two lower pairs of leaflets. Flowers pale yellow. Native of the Eaſt-Indies, Japan, Cochin-china, &c. Annual [i].

It uſually grows about four or five feet high (two feet *Dill.*). Leaflets broadeſt at their extremity, where they are bluntly rounded off, (on long pedicels. *Dill.*) Flowers axillary, formed into cloſe ſhort ſpikes, (ſtanding on a ſhort peduncle, of a pale yellow colour. *Dill.*), bright yellow. Pod ſix inches in length, ſwelling in the middle, and having five angles or borders, lengthways, (bending, four inches long, having five longitudinal wings, and ending in a point. *Dill.*) Seeds liver-coloured, a little compreſſed. This plant was diſcovered by Dr. Houſtoun at Campeachy. He entitled it, *Senna ſpuria pteramque hexaphylla, ſ. magno, ſiliqua pentagona alata.* It approaches near the *C. ſiliqua quadrangulari* of Dillenius in its leaves; but the flowers are near twice as large, and the pods are much more turgid, with broader wings. It is alſo perennial (biennial *Dill.*), and the ſtem becomes woody, whereas the other is an annual plant. The leaves are ſubſtituted for Senna in the natural place of its growth [k]. Cultivated in 1633 by Jacob Bobart [l].

β. differs in having a recurved ſilique. Quere whether it be a diſtinct ſpecies [m].

7. Arboreſcent and very ſmooth. Siliques roundiſh, coriaceous, with a double, round cell. Only two pairs of leaflets, a globular gland between the loweſt pair. Bractes ventricoſe, ſubimbricate. Silique long. Perennial [n].]

Miller deſcribes his *bicapſularis* to be an annual plant, a foot and half high, with an erect herbaceous ſtalk; three pair of oval leaflets to each leaf; the flowers axillary, ſolitary, ſmall, yellow; the pods taper; the natural place of growth Jamaica and the other ſugar iſlands. [Alſo in the iſland of Madeira. This cannot be the ſame plant with Linnæus's.

Cultivated 1739 by Mr. Philip Miller [o].

8. This is a ſmall tree, with a trunk ten or twelve feet high, and ſubdivided, round, aſh-coloured, pubeſcent branches. Leaves pinnate, ſcattered, ſpreading. Common petioles round, two inches long, pubeſcent. Leaflets petioled, blunt, nerved, thickiſh, tomentoſe, hoary beneath. Racemes axillary, ſolitary, patulous, ſhorter than the leaves, many-flowered. Flowers terminating, peduncled, yellow; pedunceles one-flowered, ſhort. Three leaflets of the calyx larger, ovate-oblong, patulous, concave-arched, pubeſcent on the outſide. Petals unequal; four with claws, oblong, almoſt of a ſize, but the lower ones ſomewhat ſmaller; the upper petal with a claw, larger, irregular, in form of the letter S placed obliquely, concave, waved at the edge. Filaments very ſhort, equal, ſubulate: anthers the length of the filaments, thick, curved in, fertile. Germ pedicelled, ſubulate, obliquely declined: ſtyle riſing: ſtigma blunt. Legume flat, broad. It flowers in the ſpring, and the ſeeds ripen in auguſt. Native of Jamaica, in dry coppices in the ſouthern part [p].] Mr. Philip Miller ſays, that it was ſent him from Carthagena by Mr. Robert Millar.

It is known by the name of Senna tree in Jamaica, and the leaves of this are ſometimes uſed inſtead of the true ſort.

[9. Height from one to two feet. Stem ſolitary, ſtraight, round, green, ſmooth, the ſize of the little finger below branching from the very bottom. Lower leaflets larger, upper ſmaller, reſembling Italian Senna, enlarging toward the end, obtuſe, but ending in a very ſhort point, covered with a fine down, perceptible to the touch rather than the ſight; at the baſe of the petioles a ſlender ſtipula on each ſide. Both leaves and ſtems have a ſtrong ſmell. The upper part of the ſtem and branches downy. Flowers axillary, few, ſmall, nodding, pale yellow. Annual [q]. The leaves have no odd leaflet. Petioles alternate, ſpreading, roundiſh, thickened at the baſe, channelled in the middle, even. Leaflets ſubſeſſile, entire: between the loweſt pair a minute, yellow, linear gland, on a ſhort petiole. Peduncles ſolitary, ſhorter than the petioles, two-flowered; pedicels quadrangular, three times as long as the peduncles. Leaflets of the calyx ovate; two larger, convex, hairy at the edge. Petals nearly equal, with claws; the three upper ones ſpreading, the two lower contiguous, rather ſmaller. The four upper filaments minute, barren without anthers, four middle, larger fertile, two lower, bent down. Anthers perforate at the tip. Germ oblong, acuminate: ſtyle ſubulate, recurved: ſtigma ſimple, pubeſcent. Legume pedicelled, linear, four or five inches long, cylindric-angular, curved, even; containing from twenty to twenty-four ſeeds [r].

The ſeeds were ſent from the Havanna in Cuba: and it is a native of Jamaica.

10. Leaflets gradually half as big again, the outmoſt therefore largeſt: three or four pairs, tapering to the baſe, almoſt ſeſſile; the inner ſide of the leaflets broader and more gibboſe, the lower towards the baſe moſt narrowed: by which mark it differs

[a] Linn. ſpec. [b] Hort. kew. [c] Linn. ſuppl. [d] Linn. [e] Hort. kew. [f] Swartz. [g] Hort. kew. [h] Linn. ſpec. [i] Linn. [k] Mill. fig. [l] Hort. kew. [m] Linn. [n] Ibid. [o] Hort. kew. [p] Swartz. [q] Dillenius. [r] Swartz.

from all the other ſorts. Perhaps, however, it may be only a variety of n. 12. Native of America [a].

11. Stem erect, roundiſh, obtuſely grooved, branches ſcarcely pubeſcent. Leaflets very ſmooth, paler green beneath, ovate-oblong, the outmoſt gradually longer, ſo as to become rather linear than lanceolate. An oblong ſubulate gland between or below the loweſt pair, and an acuter one between the outmoſt pair; ſeldom any between the intermediate pairs. Petiole erect roundiſh. Stipules linear acute ſhort. Legume four-cornered, rough with hair, ſhort. It ſleeps at night by erecting the petiole cloſe, and hanging down the leaflets near the ſtem. Native of America. Perennial [b].

12. Stem a foot and half high, rough with irregularly ſcattered dots, ſcored downwards from each petiole with two grooves. Leaflets ſmooth, acuminate, fœtid, growing gradually larger to the outer ones. Raceme terminal. Flowers pale yellow without any ſpot. The leaves in the young plant have five pairs of leaflets, but in the adult only three [c].

According to Browne, this plant riſes generally to the height of two feet and a half, or more: it is looſe in its ramifications, and well ſupplied with flowers, diſpoſed in looſe ſpikes at the extremities of the branches. The gland, which is common to moſt ſpecies of Caſſia, on ſome part of the common petiole, is in this ſort ſituated very low, and near the inſertion of the rib.

It is very common about Kingſton in Jamaica, and is called there *Stinking-weed*. The tops of the plant are commonly employed in all reſolutive baths, and it is accounted a very powerful ingredient on ſuch occaſions.

Cultivated by Mr. Miller in 1759 [d].

13. Siliques linear compreſſed ſwelling where the ſeeds are, the ſutures a little prominent [e]. Native of South-America.]

14. This tree riſes to the height of forty or fifty feet, with a large trunk, dividing into many branches. The leaflets are equal at the baſe, have many tranſverſe nerves, and the midrib is very prominent on the under ſide. The ſtipules are ſcarcely apparent. The flowers are produced in long ſpikes at the end of the branches, each ſtanding upon a pretty long peduncle; they are of a deep yellow colour, and are ſucceeded by cylindrical pods, from one to two feet long, having a dark-brown woody ſhell, with a longitudinal ſeam on one ſide, divided into many cells by tranſverſe partitions, each containing one or two oval, ſmooth, compreſſed ſeeds, lodged in a ſweetiſh, black pulp.

[This pulp is an eaſy gentle laxative, opening the paſſages without irritating the inteſtines: but it grows rancid when it has been long out of the cells, and then acquires an acrimony that renders it precarious, and even dangerous [f]. Native of both Indies.

It was cultivated in 1731, by Mr. Miller [g].

15. Stem the height of a man, woody, aſh-coloured, very branching. Branchlets and petioles ſcarce manifeſtly pubeſcent. Petioles having ſubferruginous atoms ſcattered over them, not channelled. Leaflets green on both ſides, tomenteſe to the touch; the lower ones ſmaller, more obtuſe, ſubemarginate, the inner edge of the baſe not ſmaller. Stipules ſubulate, frequently permanent from the falling of the leaves of the year preceding. Obſerved in America by Jacquin [h].

16. Stem from one to two feet high, herbaceous, ſubdivided, upright, round, hirſute, reddiſh. Branches ſhort, almoſt upright. Leaflets oppoſite, ſubſeſſile, oblong, rounded at the tip, ſharp, with a very ſmall briſtle, fixed obliquely to the petiolule, veined, a little hirſute at the edge. Common petioles thicker at the baſe, round, hirſute. Glands extremely minute, pedicelled, concealed in the hairs under the loweſt pinnæ. Stipules oppoſite, ſeſſile, ſickle-ſhaped, acuminate, entire, hirſute. Flowers two or three together, axillary, ſmall, yellow. Peduncles filiform, long, one-flowered, ſmooth, purpliſh. Bractes two, whitiſh, under the flowers. Calycine leaflets lanceolate, ſpreading. Petals nearly equal, roundiſh, with claws, concave, waved about the edge. Filaments ſeven, two of them minute, barren. Anthers linear, white, bearing pollen at the tip. Germ oblong-lanceolate, villoſe, white: ſtyle cylindric, thick, recurved: ſtigma ſimple, obtuſe. Legume ſubcylindric, linear, pedicelled, pubeſcent. Native of Jamaica; flowering towards the end of the year [i].]

17. The plant which produces the leaves commonly known in medicine by the name of Senna is annual, and riſes with an upright branching ſtalk about a foot high. The leaves are pinnate, and have four pairs of ſmall ſpear-ſhaped leaflets, ending in acute points. The flowers are yellow, and produced in looſe bunches at the top of the ſtalk.

[It grows naturally in Perſia, Syria and Arabia, whence the leaves are brought, dried and picked from the ſtalks, to Alexandria in Egypt; and being thence annually imported into Europe, it has the title *alexandrina* added to it.

[Theſe leaves are oblong, ſharp pointed at the ends, about a quarter of an inch broad, and not a full inch in length, of a lively yellowiſh green colour, a faint but not very diſagreeable ſmell, and a ſubacrid, bitteriſh, naſeous taſte. Some worſe ſorts are brought from Tripoli and other places, which may eaſily be diſtinguiſhed by their being either narrower longer and ſharper pointed, or larger broader and round pointed, with ſmall prominent veins, or large and obtuſe, of a freſh green colour, without any yellow caſt.

Mr. Miller diſtinguiſhes that which is vulgarly called Italian Senna from this ſpecifically, by its having five pairs of blunt leaflets.]

This is alſo an annual plant, riſing with a branching ſtalk a foot and half high. The leaves have five pairs of obcordate leaflets, of a ſea-green colour, and a thick conſiſtence. The flowers are large, and of a brighter yellow colour. It grows naturally in India.

[Swartz deſcribes it, as it is found on the coaſt of the iſland of Jamaica, near Port-Royal; where however it is not originally a native.

Stem ſhrubby, branched, even, with ſubdivided branches. Leaves compoſed of five, ſeldom ſix pairs of leaflets. Common petioles alternate round, thickened at the baſe. Leaflets oppoſite, oblong, rounded at the tip where there is a very ſhort briſtle, veined, glaucous, on very ſhort petiolules. Stipules at the baſe of the common petiole, oppoſite, acuminate. Racemes terminating, erect, many-flowered; the flowers on ſhort pedimcles, bent down, pale yellow. Calycine leaflets lanceolate. Petals convex, patulous. Three filaments ſuperior, four middle ſmaller, three inferior. Anthers of the ſuperior filaments large, of the middle ones ſmall, of the lower ones barren. Germ lanceolate: ſtyle incurved: ſtigma acute. Legume ſhaped like the ſtomach, pedicelled, winged on each ſide for each ſeed, the lower margin crenate. Seeds eight, oblong, compreſſed.

Swartz ſeems to doubt whether it be the genuine Senna: and in having blunt leaflets it agrees with that which Miller ſays he received from the Eaſt-Indies.]

In the Weſt-Indies, the inhabitants make uſe of the leaves of ſeveral ſpecies of Caſſia, inſtead of the true Senna; and alſo of the Poinciana, or Flower-fence, which is frequently called there true Senna.

[The accurate Gærtner, who diſtinguiſhes Senna from Caſſia generically, deſcribes the legume as ovate-reniform, membranaceous, leafy-compreſſed, toroſe where the ſeeds are, marked with capillary, tranſverſe parallel ſtreaks, having from ſix to nine

[a] Linn. ſuppl. [b] Linn. mant. [c] Hort. kew. [d] Miller. [e] Swartz.

cells, and two valves: partitions transverse, very thin. Seeds solitary, obcordate-oblong, beaked, flattish on both sides, towards the periphery declining to a sharp edge, wrinkled, pale ash-colour, with a pale linear mark, and above that a small shining chestnut spot on both sides.

Senna is one of the most general purgatives in the materia medica. For this purpose it is used in infusion, and is not unfrequently mixed with other substances, as manna, &c. It is sufficiently efficacious, and operates without violence: it is however sometimes apt to excite tormina, and it has the disadvantage of being nauseous to the taste; but to remedy this inconvenience, compositions of various kinds are prepared in the shops. Thus, for example: six drams of tamarinds and two of crystals of tartar are boiled in a pint and half of water till half a pint is wasted, and the strained liquor poured boiling hot upon one, two, or three drams of Senna: after maceration for four hours, the strained infusion is sweetened with an ounce of syrup of violets, and flavoured with half an ounce of simple cinnamon-water. Or, three drams of Senna are infused in a quarter of a pint of boiling water for four hours, or till the liquor has grown cold, with the addition of a scruple of ginger; or with half a dram of lesser cardamom-seeds husked, and three fourths of a dram of chrystals of tartar, which last are previously boiled in the water till dissolved; or with two drams of fresh lemon peel, and two drams by measure of lemon juice. This last, which is the *Infusum sennæ tamarindinum*, is considered as the most agreeable form in which the infusion of Senna can be contrived.

18. This has the stature of *Orobus niger*. Leaflets oval-oblong, blunt, with a very small bristle-shaped point. Flowers yellow. Pods linear, compressed [t]. Native of the West-Indies. Cultivated in 1766, by Mr. James Gordon [u].

This is not *C. bifora* of Miller: see n. 45.

19. This is an elegant shrub, the height of a man. Stem erect, round. Leaflets on very short petioles, opposite, the upper gradually a little larger; the rib about a foot long. Peduncles solitary and axillary towards the ends of the twigs, sustaining from three to six flowers on short pedicels. The peduncles, base of the petioles, and young branches are slightly pubescent. Leaflets of the calyx pale green, very concave, obtuse and spreading. Petals yellow, the three upper twice as broad, and a little longer than the two lower, on which three longer filaments lie; these are much declined, and bear larger anthers: Germ columnar, smooth; stigma capitate. Legume straight, a little compressed, smooth, ending in a blunt, roundish beak, about four inches long. Seeds ovate, a little compressed, shining, black, with hardly any pulp. These were gathered on the rocks of Madeira, by Masson [x].

20. Native of America. The leaves have six pairs of ovate-lanceolate, sessile leaflets: both they and the petiole are covered on both sides with a white wool [y].

21. This also is a shrub the height of a man. The young branches, petioles, peduncles, under surface and edges of the leaves are villose. Leaflets on very short petioles, blunt, with a small point. Racemes at the ends of the twigs, having about five flowers in each. Leaflets of the calyx villose, concave, yellow, very blunt, spreading, unequal. Petals yellow, blunt, almost twice as large as the calyx, the three upper ones very large. Legume linear, brownish ash-colour, slightly villose and soft to the touch, blunt, torulose, about three inches long. Seeds subovate, blunt, hardly compressed, black and very shining, without any pulp. Found by Masson in the gardens of Teneriffe [z]; and introduced by him into England in 1779. It flowers here most part of the summer [a].

22. This is a tree with round flexuose branches, covered with a thick soft white pile, which is yellow when they are dry. Leaflets linear-lanceolate, acute, quite entire, beneath white or pale yellow, and tomentose. Petioles tomentose. Stipules semilunar, or lanceolate, tomentose, deciduous. Panicles axillary, on the top of the stem, solitary. Peduncles tomentose. Flowers of a middling size, pale yellow. Pods straight, compressed, very tomentose. It was found in South-America, by Mutis [b].

23. Stems three or four inches long, simple, somewhat upright, but depressed at the base, stiff, round, villose. Leaflets from seven to nine pairs, opposite, somewhat sickle-shaped, sessile, approximating, flat, oblique, terminated by a very short bristle, and somewhat villose. Common petioles filiform, short, thickened at the base, round, hirsute. Beneath the lowest pair of leaflets are two flat, sessile, roundish, perforated, red glands. At the base of the petioles is a pair of stipules, opposite, oblique, lanceolate, acuminate, almost bristle-shaped at the tip. Flowers not axillary, but crowded above the petioles, small, yellow, on very short pedicels. Calycine leaflets lanceolate, spreading. Petals unequal, ovate, obtuse, concave, spreading. Filaments very short. Anthers linear, fertile; the three anterior ones bent down, and somewhat larger. Germ compressed, oblong: style thickish: stigma blunt, pubescent. Legume flat, compressed, of a broad linear shape, margined, blunt, villose, containing many seeds [c].

This is an annual plant, native of Jamaica, in dry pastures, creeping among the grass.

24. Stem six or seven feet high or more, the thickness of the little finger, slightly angular, putting forth many deeply striated branches from top to bottom. Leaflets from six to eight pairs, but seven the most common. The axillas, upper part of the stem, edges and backs of the leaves are finely pubescent. The lower leaflets are shorter. Flowers many, terminating, yellow. Pods at first incurved, afterwards straighter, flat, an inch broad, two inches long, and more. The leaves and flowers have somewhat of a fetid smell.

Native of the isle of Providence, and other islands in the West-Indies [d].

It was brought from the Bahama islands in 1726, by Mr. Mark Catesby; and flowered first in Sir Charles Wager's, and the Chelsea garden [e].

25. Stem subherbaceous, six feet high and more, branched, upright, furrowed, smooth, with simple striated branches. Leaves large, from one to two feet in length, with six pairs of leaflets (eight to ten *Lin.*) Common petiole thickened at the base, three-sided, excavated at top, in a manner winged. Leaflets gradually larger from the base to the tip, on very short petioles, obovate, obtuse, entire, nerved, smooth on both sides, paler underneath, pubescent. Glands none. Stipules semicordate. Racemes terminating, spiked, from one to two feet in length, solitary, round, upright, many-flowered. Flowers large, yellow, pedicelled. Bractes roundish-ovate, concave, entire, the colour of the flowers, and covering them, loosely imbricate like scales. Pedicels scattered, short, round, smooth. Calycine leaflets oblong, concave, coloured, tender. Petals unequal, with claws, roundish, concave, entire; the superior fifth petal a little larger than the others, waved with a fringed border. The three lower filaments very small, with barren anthers; the four middle ones smaller and fertile; the two upper ones longer, with very large recurved anthers, bifid at the base, retuse at the tip. Germ shortly pedicelled, long, declined, recurved, striated: style short, recurved: stigma obtuse. Pods two-valved, quadrangular, the opposite angles winged, the margin crenate. Seeds separated by alternate membranaceous partitions, rhomboidal, compressed [f].

[t] Linn. amœn. [u] Hort. kew. [x] Jacquin.
[y] Linn. hort. cliff. [z] Jacqu. [a] Hort. kew.
[b] Linn. suppl. [c] Swartz. [d] Dillenius.
[e] Mart. dec. [f] Swartz.

Ir

It lives but a few years, though it puts on the appearance of a ſhrub in its growth; and when cultivated, riſes ſometimes to the height of ſeven or eight feet, but ſeldom exceeds four in its native ſoil. Ants are very fond of the flowers. The juice of the leaves or buds is ſaid to cure the Ring-worm, whence it is called in Jamaica the Ring-worm Buſh[a]. The French in St. Domingo, where it alſo grows wild, call it *Herbe à dartres*; and Rumphius for the ſame reaſon names it *Herpetica*. It flowers in the ſpring[b].] Mr. Miller ſays that the whole plant has a ſtrong fetid odour. [It was cultivated by him in 1731[c].]

26. Root perennial, compoſed of a great number of black fibres, ſending out in the ſpring ſeveral upright ſtems, four or five feet high, [dividing into many branches pointing obliquely upwards. The ſtem, branches, petioles, edges of the leaves, peduncles and calyxes have a few whitiſh hairs on them. Leaflets from ſix to nine pairs, but moſt commonly eight; and ſometimes an odd leaflet. At the baſe of the petiole there is a ſlender ſtipule on each ſide. Flowers (two or three together) from the axillas of the upper leaves,] and in looſe ſpikes at the end of the ſtem. [Before they open they hang down, but are afterwards erect. The petals are very narrow, ſlightly concave, ſcarcely differing in ſize, of a pale yellow colour. Calyx pale or greeniſh yellow[d].

Native of North-America. Peter Collinſon received this ſpecies from Maryland in 1723[e].

27. Native of the Havanna[f].

28. The leaflets are acute, ſmooth, nearly equal and on very ſhort petioles. Flowers in ſmall racemes from the axillas. Corollas very pale yellow with brown veins. The three upper anthers are very ſmall and barren; the three loweſt are bowed, and the four middle ones ſtraight[g]. Native of the Eaſt-Indies, China, and the iſland of Tongatabu in the South Seas.

29. Leaves more than a foot long, with eight or ten pairs of leaflets, which are four inches long, linear, rounded at the end, ſoft and hoary beneath. Petiole compreſſed, and channelled between the leaflets. Raceme very large, compoſed of flowers thick heaped together, amid large ovate ſwelling imbricate nerved pubeſcent bractes, falling off immediately before the flowers unfold. Corollas yellow. Legumes incurved, compreſſed, having four angles. Found at Surinam by Dalberg[h].

30. Leaflets oval-oblong, ſmooth, petioled, nearly equal. On the common petiole between each pair there is a ſhort gland. Stipules broad, ſtem-claſping, very obtuſe, with one briſtle at the baſe on each ſide. Flowers three, four, or five in a corymb, orange-coloured. The three upper anthers are barren; the three lower oblong, bowed, the four middle ones ſtraight[i].

Native of the Eaſt-Indies. Introduced in 1777, by Daniel Charles Solander, LL. D.[k].]

31. This riſes to a great magnitude, with a large trunk, dividing into many branches. Leaves very long, compoſed of twelve or fourteen pairs of ſmooth leaflets, of a light green, and placed near together. The flowers come out in looſe ſpikes at the ends of the branches; they are of a pale carnation colour, and are ſucceeded by large cylindrical pods, [two feet long, and the thickneſs of a ſlender arm[l];] divided by tranſverſe partitions into many cells, in which the ſeeds are lodged, ſurrounded with a black purging pulp. This is called Horſe Caſſia, becauſe it is generally given to horſes, but is ſeldom uſed by the human ſpecies on account of its griping quality. [It is a native of the Eaſt-Indies, as Linnæus's trivial name implies, and ſeems to be confounded by Miller with one of the Weſt-Indian ſorts.—Introduced in 1779[m].

32. This is a ſtout tree, and the branches are covered with a fine ſilky down. Leaflets oblong, obtuſe, of equal breadth. Pods a foot and half in length, ſomewhat compreſſed, three fingers broad, very heavy, acuminate; the ſutures elevated, round, ſtanding out, one of them doubled. Native of Surinam[n].

33. Stem herbaceous, a foot high or more, diffuſed, ſmooth, round; with hirſute branches. Leaves pinnate, with twenty-four or twenty-five pairs of leaflets. Common petioles round, hirſute, thicker at the baſe. Leaflets on very ſhort petiolets, oppoſite, lanceolate, rounded at the baſe, oblique, blunt at the end and terminated by a very ſmall briſtle, nerved, ſmooth. Glands beneath the loweſt pair of leaflets, pedicelled, capitate, truncate, turbinate at the tip. Stipules lanceolate, acuminate, oppoſite, at the baſe of the petioles, half-claſping, ſmooth but pubeſcent at the edge. Flowers among the ſtipules above the petiole, and not axillary; on very ſhort, ſolitary, three-flowered pedicels. Corollas ſmall, yellow, with two minute oppoſite bractes on the pedicels. Calycine leaflets linear, equal, acute, reflex, pubeſcent. Petals unequal; the two upper ones ſmaller, with a dulky ſpot; the other three larger, having claws, roundiſh, concave, waved about the edge. Filaments unequal, the ſeven hinder ones ſmaller, the three forward ones longer. Anthers linear, angular, bearing poſſen at the tip. Germ oblong, white, very hirſute: ſtyle recurved, thick: ſtigma blunt. Legume compreſſed. It is an annual plant, native of the Weſt-Indies, in dry paſtures[o]: and was cultivated here in 1699, by the Dutcheſs of Beaufort[p].

C. Chamæcriſta of Miller does not ſeem to be the ſame with this; and he affirms that his plant, which he had from Vera Cruz by Dr. Houſtoun, is very different from the Chamæcriſta pavonis major.

34. Stems ſuffruticoſe, with almoſt naked branches. Leaflets lanceolate, with a pedicelled gland on the petiole between each pair. Peduncles axillary, double, one-flowered, ſhorter than the leaf. The flowers have ſix filaments, and two of the anthers are very long. The pods are like thoſe of Orobus[q]. Native of the Weſt-Indies.

35. Stem erect (not flexuoſe), very ſimple, round, more than two feet high. Stipules lanceolate, terminated by a briſtle. From the axils ſpring two erect filiform one-flowered peduncles, with a double lanceolate bractle towards the end. Seven of the ſtamens have oblong anthers. Legumes linear. Native of the iſland of Ceylon[r].

36. This is an annual plant, and native of Braſil[s].

37. The petiolar gland is pedicelled and brown. The peduncles are uſually three-parted and three-flowered, coming out in the ſpace above the axils. It is an annual plant, and native of Virginia[t]. Linnæus refers alſo to Rumphius's Amboina.

38. This alſo is annual, and native both of the Indies and Virginia[u]: of Japan, Cochinchina and Africa.

The following ſpecies are added from Miller, who received them from Dr. Houſtoun.]

39. This grows upwards of twenty feet high with ſeveral ſtems covered with brown bark, and dividing into many branches at top. The leaves have two pairs of leaflets, which in the lower ones are oval; but thoſe of the upper are five inches long, and two and a half broad in the middle, ſmooth, and of a light green. The flowers are produced in looſe ſpikes at the extremity of the branches; they are large, of a gold colour, and ſucceeded by taper brown pods about nine inches long, having many tranſverſe partitions, in which the ſeeds are lodged in a thin pulp. Native of La Vera Cruz.

40. This riſes with a ſtrong upright trunk to the height of twenty-five or thirty feet, dividing into many branches covered with an aſh-coloured bark. Leaves on long foot-ſtalks, compoſed of two pairs

[a] Browne. [b] Swartz. [c] Hort. kew. [d] Dillenius. [e] Mart. dec. [f] Linn. ſpec. [g] Linn. ſuppl. [h] Linn. syſt. [i] Hort. kew. [k] Linn. ſpec. [l] Hort. Kew. [m] Linn. ſuppl. [n] Swartz. [o] Hort. kew. [p] Linn. ſpec. [q] Linn. syſt. & ſpec. [r] Ibid. [s] Ibid.

of leaflets, four inches long, and near two broad, ſmooth, of a dark green on their upper ſide, but paler underneath. The flowers are produced ſometimes from the ſide of the ſtalks, where they are few and ſcattering; but the ends of the branches have large round bunches of flowers, which branch out from one centre; they are of a deep yellow inclining to orange colour, and are ſucceeded by compreſſed pods, near nine inches long, having a border on each ſide, and containing one row of oval ſmooth compreſſed ſeeds. Native of La Vera Cruz.

41. This riſes with a woody ſtem to the height of fourteen or ſixteen feet, ſending out many lateral branches. The flowers come out in looſe bunches at the ends of the branches, are of a pale ſtraw-colour and ſmall. The pods are long, narrow and jointed, each ſeed being lodged in a ſort of iſthmus: the ſeeds are oval and brown. Native of Campeachy.

42. This is a low herbaceous plant, ſeldom riſing a foot high, with a ſingle ſtem. The flowers come out ſingle from the ſide of the ſtem; they are of a pale yellow and ſmall; and are ſucceeded by narrow taper pods two inches long and growing upright. It is an annual plant, and a native of Campeachy.

43. This riſes with a ſhrubby ſtalk five or ſix feet high, ſending out many branches towards the top. The leaves have five pairs of oval leaflets, of which the upper ones are longeſt. The flowers are yellow, come out from the ſide of the ſtalks, and alſo terminate the branches in looſe ſpikes. The pods are long, taper, and contain two rows of ſeeds. Native of Jamaica.

44. This is an annual plant, with ſeveral trailing herbaceous ſtalks, about two feet long. The leaves are on long footſtalks, and at a conſiderable diſtance from each other. The flowers come out ſingle from the ſide of the branches, are of a pale yellow colour, and are ſucceeded by ſhort flat hairy pods, containing one row of flat ſeeds. Native of La Vera Cruz.

45. This alſo is an annual plant, and ſends out from the root two or three ſlender ſtalks, which trail on the ground. The leaves have four pairs of pale green roundiſh leaflets. At the inſertion of the foot-ſtalk ariſes the peduncle, which is jointed, divided into two ſhorter at the top, and ſuſtaining two ſmall yellow flowers. Native of Jamaica.

[46. Sometimes the leaves have ſix pairs of leaflets. It differs from *C. occidentalis* and *planiſiliqua* in the leaflets not tapering to the extremity. Native of the Weſt-Indies. Mr. Gilbert Alexander introduced it into England in 1778. It flowers in auguſt and ſeptember.

47. This is a native of Chili; and was introduced in 1786, by Moſſ. Thouin.

48. This is a native of the Weſt-Indies; and was introduced about 1769. It flowers in march and april [1].

49. 50, 51. Theſe three are natives of Jamaica [2]. In the 49th, Swartz refers to *C. ferrea* of Miller: but Miller has no ſpecies under that title.]

PROPAGATION AND CULTURE.

Many of theſe plants are preſerved in curious gardens, though ſeveral of them have not much beauty to recommend them. The moſt beautiful are the 8th, 14th, 31ſt, 39th, 40th, and 41ſt; theſe all make a good appearance in the ſtove when they are in flower, and as they retain their leaves all the year, they give an agreeable variety in winter. All the ſpecies contract their leaves every evening as the ſun declines, and open them again with the riſing ſun: the under ſurface of the leaflets is turned outward, the upper ſurfaces being clapped cloſe together. Moſt plants whoſe under ſurface is thus turned outward, grow on dry ſandy land, where the roots do not find a ſufficient ſupply of moiſture: the lower ſurface of the leaves being generally covered with a ſhort ſoft down, detains the nightly dews and inhales it. Theſe plants which have the upper ſurface of the leaves turned outward, do not ſtand in need of this ſupply; and accordingly that ſurface being ſmooth, the moiſture is caſt off, and not imbibed.

All the ſpecies are propagated by ſeeds, which as they moſtly come from very hot climates, muſt be ſown on a hot-bed in the ſpring; and when the plants are fit to remove, they muſt be each planted in a ſeparate pot, filled with light earth, and plunged into a moderate hotbed, where they ſhould be ſhaded till they have taken freſh root; after which they ſhould have freſh air admitted to them every day in proportion to the warmth of the ſeaſon, and ſhould be frequently watered. When the plants have filled the pots with their roots, they ſhould be ſhifted into larger: and if they are too tall to remain in the hot-bed, they muſt be placed either in the ſtove, or a glaſs caſe, where they may be defended from cold, but in warm weather have plenty of air. With this management the plants will flower in july or auguſt, and perfect their ſeeds in october, but may be preſerved through the winter in a ſtove, where they will continue flowering a long time. In warm ſummers they may be placed in the open air towards the end of june, and will flower very well there; but they will not perfect their ſeeds, unleſs they are removed into the ſtove in autumn.

14. The ſeeds of *Caſſia Fiſtula* may be eaſily procured from the druggiſts who import the pods for uſe; theſe muſt be ſown on a hot-bed treated in the ſame manner as before directed, during the firſt ſummer; but in autumn muſt be removed into the ſtove, and plunged into the tan-bed: during the winter they ſhould have very little water; for as theſe trees grow naturally in dry ſandy land, moiſture is a great enemy to them, but eſpecially during that ſeaſon. In the ſummer they ſhould have a good ſhare of air admitted to them in warm weather, but they will not thrive in the open air in this country at the warmeſt time of the year, ſo ſhould conſtantly remain in the ſtove.

17. The officinal Senna muſt be treated in the ſame manner with the other ſorts; but being an annual plant, unleſs it is brought forward in the ſpring, it will not flower; it muſt therefore be kept conſtantly in the hot-bed all the ſummer, admitting plenty of air to it in warm weather. It is very rare that it perfects ſeeds in England.

26. The Maryland Caſſia, will live abroad in a warm border and dry ſoil. The ſeeds will come up in the full ground, if ſown in april, and in autumn the plants may be removed into the borders where they are deſigned to remain.

Some of the moſt tender ſorts (8, 14, 25, 31, 33, &c.) muſt be plunged into the tan-bed, and be watered very ſparingly in winter.

CASSIA. See *Canella* and *Laurus*.

CASSIDA. See *Scutellaria*.

CASSINE.

*Lin. gen.* 371. *Reich.* 401. *Schreb.* 504. *Juſſ* 378. *Gærtn. t.* 92. Maurocenia. edit. 1. and *Mill. dict.*

Claſſ. 5. 3. Pentandria Trigynia.

Nat. order of *Dumoſæ*. *Rhamni* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* quinquepartite, inferior, very ſmall, obtuſe, permanent.

COR. quinquepartite, ſpreading. *Diviſions* ſubovate, obtuſe, larger than the calyx.

STAM. *Filaments* five, ſubulate, ſpreading. *Anthers* ſimple.

PIST. *Germ* ſuperior, conic. *Style* none. *Stigmas* three, reflex, obtuſe.

PER. *Berry* roundiſh, trilocular, umbilicated with the ſtigmas.

SEEDS ſolitary, ſubovate.

OBS. *Corolla pentapetalous.* S. V. p. 243. R.

ESSENTIAL CHARACTER.

*Calyx* quinquepartite. *Petals* five. *Berry* triſpermous.

[1] Hort. kew. [2] Swartz.

SPECIES.

1. Cassine capensis. *Cape Cassine*, or *Phillyrea*.
*Linn. fyst.* 295. *mant.* 220. *suppl.* 184. *Reich.* 735.
Maurocenia Phillyrea. *Mill. dict. n.* 2.
Celastrus *Burm. afr.* 239. *t.* 85.
Phillyrea capensis, folio celastri. *Dill. elth.* 315. *t.* 236. *f.* 305. *Seb. mus.* 1. 46. *t.* 29. *f.* 5.
*Leaves petioled ovate-oblong retuse crenate.*

2. Cassine Peragua.
*Lin. spec.* 384. *fyst.* 295. *Reich.* 735. *mat. med.* 88. *hort. cliff.* 72. *Pluenck. ic.* 1. 239.
C. corymbosa. *Mill. dict. n.* 1. *fig.* 1. 83. *f.* 1.
*Leaves petioled serrate elliptic somewhat acute, branchlets axcipital.*

[3. Cassine barbara.
*Lin. fyst. Reich.* 735. *mant.* 220.
*Leaves sessile serrate-toothed cordate oblong, branchlets quadrangular.*]

4. Cassine Maurocenia. *Great Hottentot Cherry.*
*Lin. spec.* 385. *Reich.* 736. *Gærtn. fruct.* 2. 70.
Maurocenia. *Lin. hort. cliff.* 108.
M. Frangula. *Mill. dict. n.* 1.
Frangula sempervirens, fol. rigido subrotundo. *Dill. elth.* 146. *t.* 121. *f.* 147.
*Leaves sessile quite entire obovate coriaceous.*

DESCRIPTIONS, &c.

1. Cape Cassine has a woody stalk, which in this country seldom rises more than five or six feet high, sending out many branches, covered with a dark purplish bark. Leaves stiff, opposite, about an inch and half long, and a little more in breadth, of a light green, on short foot-stalks. The flowers are produced in roundish bunches from the side, and at the end of the branches; they are white, and have five small petals spreading open. Germ roundish, crowned by a bifid or trifid stigma. [Corymbs very short as in the *Maurocenia*, from which it is hardly distinct. The leaves vary in form, but this being gradual in the same tree shows the variation. The flowers are sometimes quadrifid and quinquefid. This shrub is a native of the Cape [a]; and was cultivated in 1726 at Eltham by James Sherard, M. D. [b].]

2. It rises with two or three stems which send out many side branches their whole length and become bushy; they are seldom more than eight or nine feet high. Towards the upper part of the branches, the flowers come out from the sides in roundish bunches; they are white, and divided into five parts almost to the bottom.

The leaves are extremely bitter. They continue green very late in autumn, if the season prove mild, and they come out early in the spring. The flowers appear in july and august. Native of Virginia and Carolina.

[3. Leaves slightly embracing the stem, emarginate at the base, with raised veins, smooth, shining, with distinct serratures standing out. Pedunckes axillary filiform, half the length of the leaves, commonly three-flowered [c]. Native of the Cape of Good Hope.]

4. At the Cape of Good Hope, where this shrub grows naturally, it rises to a considerable height, but here it is rarely more than five or six feet high. The stalk is strong, woody, and covered with a purplish bark, sending out many stiff branches. Leaves very thick, for the most part opposite, about two inches long and almost as broad, of a dark green colour. The flowers come out from the side of the old branches in clusters, three, four or five together, on one common slender peduncle. Petals five, plane, equal, acute, first greenish yellow, but changing to white, spreading wide open. Germ oval, crowned by a trifid stigma. Between each petal a stamen; these spread open in the same manner as the petals, and are terminated by obtuse anthers. The fruit changes to a dark purple colour when ripe. It is a berried drupe, superior, globular, crowned with the three stigmas: rind fleshy, thin; shell crustaceous, thin, three-celled. Seeds

[a] Linn. suppl. [b] Dill. elth. [c] Linn. mant.



fixed to the cells by the top, without any receptacle; they are solitary, ovate, acuminate above, black with a minute whitish umbilicus [a].

Introduced in 1690 by Mr. Bentick [b].

It flowers in july and august, and the fruit ripens in winter.

Linneus gave this shrub the name of *Maurocenia*, in honour of the Venetian Senator *Franc. Morosini*, who had a fine garden at Padua, a catalogue of which was published by Ant. Tita.]

Mr. Miller has two other species of *Maurocenia*.

1. M. Cerasus. *The smaller Hottentot Cherry*, which is *Celastrus lucidus* of Linneus.

2. M. Americana. n. 4.—with obovate emarginate leaves, and solitary axillary flowers. Frangula folio subrotundo rigido subtus ferrugineo. *Houst. Mss.*

Stalk woody, from fifteen to twenty feet high, covered with a rough brown bark, and dividing into many branches. Leaves stiff, alternate, about an inch and half long, and a little more in breadth, gray on their upper side, but of a rusty iron colour on their under, having a stiff reflex border, and standing upon short foot-stalks. The flowers come out singly along the side of the branches: petals five, small, white, acute. Filaments slender, spreading open: anthers blunt. Stigma bifid, permanent. Berry round, one or two-celled, with one oblong seed in each cell.

It was discovered by Dr. Houstoun at the Palisadoes in Jamaica.

[*Cassine Peragua* of Miller is *Ilex Vomitoria*. *C. Peragua* of the Mantissa, is *Viburnum lucigatum*.]

PROPAGATION AND CULTURE.

The first and fourth sorts are too tender to live abroad in England, but as they require no artificial heat, they may be preserved through the winter in a good green-house, where they deserve a place for the beauty of their leaves; they may be propagated by laying down those shoots which are produced near the root, but they are long in putting out roots. The shoots should be twisted in the part which is laid, to facilitate their putting out roots; if these are laid down in the autumn, they will put out roots sufficient to remove in the following autumn; they may also be propagated by cuttings, but this is a tedious method, as they are seldom rooted enough to transplant in less than two years. When this is practised, the young shoots of the former year should be cut off, with a small piece of the old wood at the bottom, in the spring, and planted in pots filled with loamy earth, and plunged into a moderate hot-bed, covering the pots with glasses, which should be close stopped down to exclude the external air; they should be pretty well watered at the time they are planted, but afterward they will require but little wet; the glasses over them should be covered every day with mats, to screen the cuttings from the sun during the heat of the day, but in the morning before the sun is too warm, and in the afternoon, when the sun is low, they should be uncovered, that the oblique rays of the sun may raise a gentle warmth under the glasses. With this care the cuttings will take root, but where it is wanting, they seldom succeed. When the cuttings or layers are rooted, they should be each planted in a separate small pot, filled with soft loamy soil, and placed in the shade till they have taken new root; then they may be removed to a sheltered situation, where they may remain during the summer season; and, before the frosts of the autumn come on, they must be removed into the green-house, and treated in the same way as the other plants of that country, giving them but little water in cold weather, and in mild weather admitting the free air. In summer they must be removed into the open air, and placed in a sheltered situation with other exotic plants, and in very warm weather they must be watered three times a week, but it must not be given them too freely at any time. When the plants have

[a] Gærtner. [b] Hort. kew.

obtained

obtained ſtrength, the fourth ſort will produce flowers and fruit, which, in warm ſeaſons, will ripen perfectly: and if the ſeeds are ſown ſoon after they are ripe, in pots, and plunged into the tan-bed in the ſtove, the plants will come up the ſpring following, and may then be treated in the ſame manner as thoſe which are propagated by cuttings and layers.

The firſt ſort is not altogether ſo hardy as the fourth, and muſt therefore have a warmer place in the green-houſe in winter, and ſhould not be placed abroad quite ſo early in the ſpring, nor ſuffered to remain abroad ſo late in the autumn. As this does not produce ſeeds in England, it can only be propagated by layers and cuttings, and theſe not taking root without difficulty it is ſcarce in Europe.

The ſecond ſort is propagated by laying down the branches, which afford ſhoots in plenty for that purpoſe from the root, and lower part of the ſtem, ſo as to become very buſhy and thick, if they are not cut off; there are numbers of theſe ſhrubs which produce flowers in England every year, but none of them ripen their ſeeds.

The leaves are frequently pinched by the froſt in march, when they appear ſo ſoon.

It loves a light ſoil, not too dry, and ſhould have a warm ſituation; for in expoſed places, the young ſhoots are frequently killed in the winter, whereby the ſhrubs are rendered unſightly; but where they are near the ſhelter of trees or walls, they are very rarely hurt.

All the ſorts delight in a ſoft, gentle, loamy ſoil, not over ſtiff, ſo as to detain the wet, nor ſhould the ſoil be too light, for in ſuch they ſeldom thrive. They retain their leaves all the year, which being remarkably ſtiff and of a fine green, make a good appearance, eſpecially the fourth ſort, the fruit of which ripens in winter, and when it is in plenty on the plants affords an agreeable variety.

CASSINE. See *Ilex*, *Prinos*, and *Viburnum*.

CASSIOBERRY-BUSH. See *Viburnum*.

CASSITHA. See *Cuſcuta*.

CASSUTHA and CASBUTA. See *Cuſcuta*.

CASSUVIUM. See *Anacardium*.

CASSYTA.

*Lin. gen. n.* 505. *Reich.* 548. *Schreb.* 690. *Oſbeck. Jacqu. amer.* 115. *Juſſ.* 439. *Gærtn. t.* 27.

Claſſ. 9. 1. Enneandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* triphyllous, very ſmall, permanent; *leaflets* ſemi-ovate, acute, concave, erect.

COR. *Petals* three, roundiſh, acute, concave, permanent. *Nectary* of three glands, oblong, truncate, coloured, length of the germ, ſtanding round it.

STAM. *Filaments* nine, erect, compreſſed: two globular glands ſeated on the ſides of the baſe of the three interior filaments. *Anthers* adjoined to the filaments below the tips.

PIST. *Germ* ovate, within the corolla and calyx. *Style* thickiſh, length of the ſtamens. *Stigma* obſcurely trifid, obtuſe.

PER. *Receptacle* growing out into a depreſſed-globular *drupe*, crowned with the converging calyx and corolla, perforated with a navel.

SEED. *Nut* globular, acuminate with the converging ſtamens.

OBS. *There is no calyx, but a ſexpartite corolla; therefore the calyx is now regarded as part of the corolla.* Syſt. Veget. p. 318. R.

ESSENTIAL CHARACTER.

*Cor.* calycine, ſexpartite. *Nectary* of three truncate glands ſurrounding the receptacle. Interior *filaments* glanduliferous. *Drupe* monoſpermous.

SPECIES.

1. Caſſyta filiformis.
   *Lin. ſpec.* 530. *Juſſ.* 384. *Reich.* 2. 230. *Jacqu. amer.* 115. *t.* 79. 58. *t.* 116. *Gærtn. fruct.* 1. 133.
   Cuſcuta. *Camell. luz.* 1. *n.* 1. *Pet. gaz. t.* 49. *f.* 12. *Pluk. alm. t.* 172. *f.* 2. *Rumph. amb.* 5. 491. *t.* 184. *f.* 4.
   Acatſia-valli. *Rheed. mal.* 7. 83. *t.* 44. *Raii ſuppl.* 551.
   Volutella aphylla. *Forſk. ægypt.* 84. *n.* 56.
   *Filiformi lax.*
2. Caſſyta corniculata.
   *Lin. ſyſt.* 385. *Reich.* 2. 231. *mant.* 237. *Burm. ind.* 93. *t.* 33. *f.* 1. *Rumph. amb.* 7. 52.
   *Branches woody ſpinous.*

DESCRIPTIONS, *&c.*

1. This plant grows naturally in both Indies. I have received it from Barbadoes, Jamaica, and the Spaniſh Weſt Indies; and that it grows alſo in the Eaſt Indies, is plain from its figure in the Hortus Malabaricus. It riſes with taper ſucculent ſtalks, which divide into many ſlender ſucculent branches: theſe come out frequently by threes or fours at the ſame joint, afterward they ſend out ſide branches ſingly without order, and become very buſhy: the flowers come out on the ſide of the branches ſingly, ſitting very cloſe thereto, having no calyx; the corolla is oval, white, with a ſmall tincture of red, opening like a navel at the top, including the germ, ſtamina, ſtyle, and nectareous glands ſo cloſely, as not to be diſcovered till the corolla is cut open.

[This paraſitical plant is generally ſaid to be abſolutely leafleſs, and Jacquin affirms that he has always found it to be ſo. The author of the *Hortus Malabaricus* however ſays, that on the green tender twigs there a few very ſmall leaves, coming out ſeveral together. The twining thread-like ſtems put out many warts, like the feet of caterpillars, by which they adhere to the leaves and ſtems of ſhrubs ſo ſtrongly as not to be ſeparated without tearing them; and when they have fixed themſelves to theſe, they no longer draw any nouriſhment from the ſoil. The ſpikes of flowers are lateral, very looſe, thick, alternate at different diſtances. The flowers are very ſmall, and have no ſcent. The fruit is pellucid, white, ſhining, ſweet to the taſte, the ſize of a pea; and contains a black ſtone, with a yellow kernel in it[a].

Jacquin found it in the iſland of Tierra Bomba near Carthagena. It alſo occurs in the Society and Friendly iſlands.

The Eaſt Indian plant may poſſibly be a different ſpecies. Gærtner is of opinion that it is, and names it *Caſſyta zeylanica*. He ſays, that the belly of the calyx does not cover the whole nut, and that it has at the edge ſix pale, obtuſe, concave, diſtant ſcales, like ſo many toothlets, three of them ſhorter, and a little without the others, but all converging. Stamens only ſix, in a ſingle row within the ſcales; three ſhorter, correſponding with the larger ſcales and ſubulate; the other three placed within the ſmaller ſcales, longer, and having a globular gland on each ſide near the baſe, as in the other. The nut is globular, produced at top, with a ſhort ſtyle and three ſtigmas, it is of a dark chefnut colour, ſmooth, one-celled and valveleſs[b].

Linneus obſerves, that it has the herb of *Cuſcuta*, and the fructification of *Laurus*: but the fructification being now better known, it appears to be as different in that from *Laurus* as in the habit.

2. Branches a foot long, woody, the thickneſs of a finger. Spines ſolitary, recurved. Leaves ſmaller than the ſpines, lanceolate-linear. Berries ſubſeſſile. Mountains of the iſland of Celebes, among rotten trunks of trees. *Lin. mant.* In Java. *Burm.* who ſays that he received it in 1758.

Juſſieu (gen. 440.) doubts whether this be of the ſame genus with the foregoing, ſince it differs ſo much from it in the ſpines, and diſpoſition of the parts.]

PROPAGATION AND CULTURE.

This plant is eaſily propagated by planting cuttings of it during the ſummer months, but as theſe cuttings are ſucculent, it will be proper to cut them off a week before they are planted, laying them in

[a] Jacquin. [b] Gærtner.

the flowe, that the part cut may have time to heal over before they are planted. These cuttings should be planted in small pots, which must be plunged into a moderate hot-bed, where, if they are not over watered, they will take root in six weeks; then they may be parted, planting each into a separate small pot, filled with light sandy earth, and may be plunged again into the hot-bed to forward their taking new roots; after which they should be removed into a dry flowe, where they should constantly remain, giving but little water in winter, and in summer admitting a large share of air in warm weather, for this plant is too tender to thrive in the open air in this climate.

[CASTANEA. See *Fagus*.]

CASTANEA EQUINA. See *Æsculus*.

[CASTILLEIA. *So named by Mutis, in memory of Castillefort, a botanist of Cadiz.*]

*Linn. suppl.* 447. *n.* 1408. *Gen. Schreb. n.* 1059. *Smith, ic. ined.* 40. *Juss.* 100.

Class. 14. 2. Didynamia Angiospermia.

Nat. order of *Personatæ*. *Pediculares* Juss.

GENERIC CHARACTER.

CAL. one-leafed, tubular, longitudinally cloven in front beyond the middle, nerved, pubescent coloured, somewhat swelling at the base, compressed at top: *upper lip* bifid, obtuse; *lower* none.

COR. monopetalous, ringent. *Upper lip* very long, curved inwards, emarginate, pubescent on the back: *lower* very short, trifid, with acute segments.

*Nectary?* two glandular corpuscles inserted into the throat of the corolla between the divisions of the upper lip.

STAM. *Filaments* four, inserted into the base of the corolla, the length of the upper lip, filiform, smooth; the lower pair a little shorter. *Authers* twin, linear, oblique.

PIST. *Germ* superior, oblong, compressed. *Style* filiform, the length of the stamens. *Stigma* simple, obtuse.

PER. *Capsule* ovate acuminate, compressed, even, two-celled, the partition contrary to the valves.

SEEDS numerous small.

ESSENTIAL CHARACTER.

*Cal.* tubular, compressed: upper lip bifid, lower none. *Cor.* lower lip trifid, with two glands between the segments. *Caps.* two-celled.

SPECIES.

1. Castilleia fissifolia.

*Linn. syst.* 518. *suppl.* 293. *Smith, ic. ined.* 2. 40. *Leaves cleave-pinnate at the tip.*

2. Castilleia integrifolia.

*Linn. syst.* 518. *suppl.* 293. *Smith, ic. ined.* 2. 39. *Leaves linear-lanceolate entire.*

DESCRIPTIONS, &c.

1. *Root* branched, fibrous. *Stem* herbaceous, sometimes suffruticose, from three to four feet high, upright, roundish, little branched, leafy, pubescent; twigs axillary, from upright spreading, leafy, many-flowered. *Leaves* alternate, sessile, spreading very much, ovate at the base, entire, pinnatifid at the tip, with spreading bluntish almost alternate segments, pubescent on both sides, three-nerved. Stipules none. *Flowers* towards the ends of the larger branches, axillary, solitary, peduncled, specious, probably scarlet. Proper bractes none. Peduncles round, pubescent, upright, one-third only of the length of the leaves.

Native of New Granada; where it was found by Mutis.

2. *Stem* herbaceous, round, upright, branched, leafy, slightly rough with hairs. *Leaves* alternate, sessile, spreading, obtuse, slightly channelled, nerved, pubescent on both sides. Stipules none. *Flowers* on the elongated ends of the branches, forming a sort of raceme, each from the axil of its own bracte-shaped leaf. Peduncles filiform, upright, shorter than the leaves. The structure of the flower is the same in this as in the other species, but all the parts are a little smaller. The fruit seems to be the same in both.

This also was discovered, in New Granada, by Mutis[a].

The *integrifolia*, according to the Supplement, resembles the *fissifolia* so much, that Linnæus suspected it to be no more than a variety. For this however there seems to be no foundation.]

CASTOREA. See *Duranta*.

[CASUARINA.

*Forst. gen. n.* 52. *Lin. suppl.* 62. *n.* 1428. *Schreb.* 1395. *Juss.* 412. *Gærtn. t.* 91.

Class. 21. 1. Monoecia Monandria.

Nat. order of *Coniferæ*.

GENERIC CHARACTER.

* *Males* in a filiform ament.

CAL. *Common ament* loosely imbricate, consisting of small one-flowered one-leafed scales.

COR. *Scales* two-parted ovate minute.

STAM. *Filament* capillary, longer than the calyx. *Anther* twin.

* *Females* on the same plant.

CAL. *Ament* ovate-cylindric; with ovate, acute, keeled, imbricate scales.

COR. none.

PIST. *Germ* minute. *Style* filiform, longer than the calyx, bifid. *Stigmas* two.

PER. *Strobile* of bivalve scales gaping perpendicularly.

SEEDS solitary, conic, with a membranaceous edge.

ESSENTIAL CHARACTER.

MALE. *Cal.* of the ament. *Cor.* scalelets two-parted.

FEM. *Cal.* of the ament. *Cor.* none. *Style* bifid. *Strobile*.

SPECIES.

1. Casuarina equisetifolia. *Horse-tail Casuarina.*

*Lin. syst.* 840. *suppl.* 412. *Thunb. diss.* 53. *diss. hort. keew.* 3. 320.

C. littorea. *Rumph. amb.* 3. 86. *t.* 57.

*Monoecious; whorls of the flaments approximating.*

2. Casuarina nodiflora.

*Lin. syst.* 840. *Thunb. diss.* 54. *Gærtn. fruct.* 2. 63. *Rumph. amb.* 3. 87. *t.* 58.

*Monoecious; whorls of the flaments remote.*

3. Casuarina stricta. *Upright Casuarina.*

*Ait. hort. kew.* 320.

*Dioecious; branchlets fascicled; scales of the strobiles ovate, subobtuse; male-strobiles multifid-smooth.*

4. Casuarina torulosa. *Cork-barked Casuarina.*

*Ait. hort. kew.* 320.

*Dioecious; branchlets fascicled; scales of the strobiles oblong-rough-keeled with tubercles, male-strobili quadrifid.*

5. Casuarina africana.

*Linn. cor.* 62. 549.

*Fronds filiform, swelling at the tip and fructiferous; strobiles ovated & axillary.*

DESCRIPTIONS, &c.

1. A very large, spreading, and lofty tree. Branchlets scattered, round, ash-coloured, knotted and whorled with deciduous leaves: the last bristled with recurved dried leaves: the branchlets are long, lax, and subdivided. The last branchlets are scattered, aggregate, filiform-capillary, lax, covered with decurrent leaves, jointed, striated, flowering at the end, of a finger's length. Leaves, if they be truly such, in whorls of eight together, decurrent far down, at bottom subconnate, erect, spreading at top, subulate. Flowers on the last branches verticil-spiked. Male spike thicker than the branchlet, subclavated, an inch long. Female strobile oblong, obtuse, solitary on the branchlets below the males, erect, the size of a walnut, on a peduncle scarcely a line in length[a].

The leaves, if they may be so called, or rather branchlets, hanging down in bunches from twelve to eighteen inches in length, like a horse head of hair, or a horse's tail, all jointed from top to bottom, like the Equisetums or Horse-tails, is a very remarkable character of this singular tree[b].

[a] Smith. [b] Thunberg.

It is a native of the East Indies and the South Sea Islands; was introduced in 1766 by Admiral Byron; and flowers in october and november[1].

2. A lofty tree. The branches and branchlets more deeply ſtriated. The male flowers on the laſt branchlets in whorls, remote, diſtinct[2].

Gærtner deſcribes the ſtrobile as ſubglobular, echinate and pedicelled. The ſcales of the calyx, when ripe, thicken very much, and become ſuberous or like cork; they are retuſe, white, in pairs, and placed ſo cloſe as to appear one body handſomely tellulated in quadrangular figures. The valves of the calyx much lengthened out, coriaceous and concave, incloſe the ſeed in a ſort of ſheath.—Native of the Eaſt Indies and New Caledonia.

3. A native of New South Wales. Introduced 1770 by Kennedy and Lee. It flowers in november and december.

4. A native of New South Wales. Sir Joſeph Banks, Bart. introduced it 1772[3].

5. This is a tree above the middle ſize, with few, long, diffuſed branches, and leaf-bearing reclining branchlets. Fronds in bundles at the ends of the branchlets, a foot long, ſubcylindric, very ſtiff and ſtraight, ſcarcely equalling the leaves of the Pine in thickneſs, ſomewhat jointed: *leaflets* tubular, longiſh, entirely ſheathing, ſeven-furrowed, ſeven-cleft at the end, the ſegments ſharp and preſſed cloſe. Male flower apetalous, terminating the frond, which is there thickened into an ament, compoſed of ſcales like the leaflet, but thicker, ſhorter, ſheathing and ſeven-parted; each legment bearing a ſingle filiform filament, longer than the ſcale, and terminated by an ovate, erect, two-celled anther. Female flower in a ſhort ament at the axil of the frond; ſcales like thoſe of the male, but thicker, ſeven-parted, acute, ſheathing. Strobile roundiſh, half an inch long, woody, opening perpendicularly by twelve valves; each fiſſure opening three or four cells, having one ſeed in each: the partial valves acute. Seed ſubovate, terminated by a membranaceous wing.—Native of the ſandy eaſt coaſt of Africa. The wood is very hard and heavy.

The firſt ſpecies would not be very different from this, if the ſtrobiles were alike, and the ſwelling tips of the fronds were converted into male aments, as in this[4].

CATALPA. See *Bignonia*.]

CATANANCHE. (*From καταὶ and ἀνάγκη violence: being once foolishly supposed to give a violent impulse to love.*)

*Linn. gen.* n. 920. *Reich.* 999. *Schreb.* 1250. *Gærtn.* t. 157. *Vaill. A. G.* 1721. 56. 11. *Juſſ.* 171. Catanance. *Tourn.* 271.

Claſſ. 19. 1. Syngeneſia Polygamia Æqualis.

Nat. order of compound flowers—diviſion, *Semiflosculosæ. Cinarocephalæ* Juſſ.

GENERIC CHARACTER.

Cal. *Common* imbricate, turbinate; *leaflets* very many, looſely incumbent, acute, ſcariose; the *squamulæ* ovate-acuminate, concave, lax, gloſſy, permanent.

Cor. *Compound* generally imbricate, uniform: *corollets* hermaphrodite, very many; the exterior ones longer.

*Proper* monopetalous, ligulate, linear, truncate, five-toothed.

Stam. *Filaments* five, capillary, very ſhort. *Anthers* cylindric, tubular.

Pist. *Germ* oblong. *Style* filiform, length of the ſtamens. *Stigma* bifid, reflex.

Per. none. Calyx unchanged.

Seeds ſolitary, turbinate-ovate. *Down* from a five-awned calycle.

Rec. chaffy.

Obs. *There is a species in which the compound corolla is not imbricate.*

ESSENTIAL CHARACTER.

*Receptacle* chaffy. *Calyx* imbricate. *Down* awned from a five-briſtled *calycle*.

SPECIES.

1. Catananche cærulea.
*Lin. ſpec.* 1142. *ſyſt.* 722. *Reich.* 3. 664. *Gouan. hort. monſp.* 418. 1. *Villars dauph.* 3. 58.
Chondrilla. *Bauh. pin.* 130. 6. *Dod. pempt.* 638. *Barr. ic.* 1134. *Raii hiſt.* 327.
β. C. fl. pleno cæruleo. *Tourn. inſt.* 478.
Chondrilla cyani capitulis, altera. *Bauh. pin.* 431.
*The lower scales of the calyx ovate.*
2. Catananche lutea.
*Lin. ſpec.* 1142. *ſyſt.* 722. *Reich.* 3. 664. *Gærtn. fruct.* 2. 356. *Gouan. hort. monſp.* 418. 2.
Chondrilla. *Barr. icon.* 2. 21. *t.* 7. *Barr. ic.* 1135.
*The lower scales of the calyx lanceolate.*
3. Catananche græca.
*Lin. ſpec.* 1142. *ſyſt.* 722. *Reich.* 3. 665.
Scorzonera græca. *Tourn. cor.* 36. *inſt.* 1. *t.* 223–86.
*Leaves gashed.*

DESCRIPTIONS, &c.

1. The firſt ſort ſends out many long, narrow, hairy leaves, which are jagged on their edges like thoſe of Buckhorn Plantain, but the leaves are broader, the jags deeper, and at greater diſtances; theſe lie flat on the ground, turning their points upwards, which are very narrow. Between the leaves come out the flower-ſtalks, which are in number proportionable to the ſize of the plant; for from an old thriving root, there is frequently eight or ten, and young plants do not ſend out more than two or three. Theſe ſtalks riſe near two feet high, dividing into many ſmall branches upward, with leaves like thoſe below, but ſmaller, and have few or no jags on their edges: each of the peduncles are terminated with ſingle heads of flowers, having a dry, ſilvery, ſcaly calyx, in which are included three or four florets, whoſe petals are broad, flat, and indented at their ends; theſe are of a fine blue colour, having a dark ſpot at bottom, and in each the ſtamens, with their yellow ſummits, ſtanding a little above the petal, make a pretty appearance.

There is a variety of this with double flowers, which is not very common in the Engliſh gardens.

[Perennial. The leaves are hoary and briſtle[1]; linear-lanceolate, with one or two toothlets on each ſide[2]. It is a native of the South of Europe; was cultivated, as appears from Parkinſon, in 1640; and flowers from july to october[3].]

2. The ſecond ſort has broader leaves than the firſt, ſmoother, and leſs jagged on their edges: from each root ariſe two or three ſtalks, which grow a foot and a half high, ſending out two or three ſlender peduncles, each ſuſtaining a ſingle head of yellow flowers, incloſed in a dry ſcaly calyx, of a darker colour than thoſe of the firſt: as theſe flowers are ſmall, they make but little appearance.

[Annual. The leaves are green, flexile and three-nerved. The later flowers are ſeſſile at the root, hardly unfolded, but more fertile[4].

Native of the iſle of Candia. Cultivated in the botanic garden at Cheliſea, in 1714. It flowers in june and july[5].]

3. Tournefort mentions a third ſort with a narrow leaf, in which it differs from the ſecond; but if there is ſuch a diſtinct ſpecies, I have not happened to meet with it; for although I have frequently received the ſeeds from ſeveral parts of Europe by this title, yet I could not find any difference between the plants, and thoſe of the ſecond ſort; therefore I ſuppoſe Tournefort may have found the plants growing on a ſterile ſoil, where the leaves were much narrower than thoſe growing in a garden, or in better ground, which may have induced him to ſuppoſe they were diſtinct ſpecies. Both theſe plants grow naturally in the South of France, in Spain, Italy, and Candia, from whence it had the title of Candia Lions Foot.

[*C. græca* differs from *lutea* not only in having gaſhed leaves, but the pappus or aigrette of the

[1] Hort. kew. [2] Thunb. [3] Hort. kew. [4] Loureiro.

[1] Linn. ſyſt. [2] Gouan. [3] Hort. kew. [4] Linn. ſyſt. [5] Hort. kew.

ſeed twelve-leaved: whereas in the *lutea* it is five-leaved[1].

PROPAGATION AND CULTURE.

The firſt of theſe plants is a perennial, and may be propagated by heads taken off the mother plant either in ſpring or autumn; but thoſe plants which are raiſed from ſeeds, are much ſtronger than thoſe from ſlips. Theſe plants are commonly planted in pots filled with light ſandy ſoil, in order to ſhelter them in the winter from ſevere froſts; but if they are planted in warm borders, near walls, pales, or hedges, in amoderately dry ſoil, they will endure abroad very well. It begins flowering in may, and continues till auguſt or ſeptember (eſpecially if the ſummer is not too dry,) is a pretty ornament to a garden, and is eaſily kept within bounds. This may alſo be propagated by ſeeds, which ſhould be ſown in a border of good light earth in march: and in may, when the plants are come up, they may be either tranſplanted into pots or borders, where they are to remain for flowering. Theſe plants ſhould remain unremoved when they are planted in the full ground, which will cauſe them to flower better, and they will produce more ſeeds. The ſeeds ripen in auguſt.

The ſecond ſort is an annual plant, and therefore only propagated by ſeeds, which ripen very well in this country. The time for ſowing them is early in march, in beds or borders of light earth where they are to remain, which will come up in a month or five weeks time, and require no other care but to keep them clean from weeds, and thin the plants where they are too cloſe. Theſe flower in june, and perfect their ſeeds in auguſt or ſeptember; but as they have little beauty, they are not often kept in gardens.

[CATAPPA, See *Terminalia*.

CATAPUTIA. See *Euphorbia* and *Ricinus*.

CATARIA. See *Dracocephalum*, *Hyſſopus*, and *Nepeta*.

CATCHFLY. See *Lychnis*.

CATECHU. See *Areca*.

CATELÆ-VIRGON. See *Ariſtolochia*.

CATERPILLARS. See *Scorpiurus*.]

CATESBÆA. (*Named by Gronovius in honour of Mr. Mark Cateſby, author of the Natural Hiſtory of Carolina.*)

*Lin. gen. n.* 130. *Reich.* 136. *Schreb.* 166. *Juſſ.* 199. *Gronov.*

Claſs. 4. 1. Tetrandria Monogynia.

Nat. order of *Luridæ*. *Rubiaceæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-toothed, ſuperior, very ſmall, acute, permanent.

COR. monopetalous, funnel-form. *Tube* extremely long, ſtraight, gradually widening upwards. *Border* ſemi-quadrifid, broad, erect-flat.

STAM. *Filaments* four, growing within the neck of the tube. *Anthers* oblong, erect, almoſt longer than the corolla.

PIST. *Germ* roundiſh, inferior. *Style* filiform, length of the corolla. *Stigma* ſimple.

PER. *Berry* oval, crowned, unilocular. (bilocular *Sw.*)

SEEDS many, angulate.

ESSENTIAL CHARACTER.

*Cor.* monopetalous, funnel-form, extremely long, ſuperior. *Stamens* within the mouth. *Berry* polyſpermous.

SPECIES.

1. Cateſbæa ſpinoſa. *Lily-thorn.*

*Lin. ſpec.* 159. *Reich.* 311. *Cateſb. car.* 2. *t.* 100. *Curtis magaz. t.* 131.

C. longiflora. *Swartz prodr.* 30.

*Tube of the corolla very long, berries oval.*

[2. Cateſbæa parviflora.

*Swartz. prodr.* 30.

*Tube of the corolla four-cornered abbreviated, berries roundiſh.*]

DESCRIPTIONS, *&c.*

1. This ſhrub was diſcovered by Mr. Cateſby, near Naſſau town, in Providence, one of the Bahama iſlands, where he ſaw two of them growing, which were all he ever ſaw; from theſe he gathered the ſeeds, and brought them to England in 1726, from which many plants were raiſed in the Engliſh gardens, ſome of which have ſince flowered here.

It riſes with a branching ſtem to the height of ten or twelve feet, covered with a pale ruſſet bark; the branches come out alternately from the bottom to the top, with ſmall leaves, reſembling thoſe of the Box-tree, in cluſters all round the branches, at certain diſtances; the flowers come out ſingle from the ſide of the branches, hanging downward; and are of a dull yellow colour. The berry is the ſize of a middling Plum, hollow within, with ſmall angular ſeeds.

[Mr. Cateſby relates that the largeſt of the trees which he ſaw was about four inches thick, and twelve or fourteen feet in height; the bark ſmooth, of a greeniſh ruſſet colour, and the wood ſeemingly tough and hard; the leaves like thoſe of Box, but ſmaller, growing in cluſters at intervals of about an inch; from every cluſter two ſharp pliant ſpines ſhooting out. The flowers are about ſix inches long, in form of a Roman trumpet, except that they are divided at the verge into four deep ſegments, uſually reflex. The fruit is the ſize of a pullet's egg, the pulp like that of a ripe apple, with a ſmooth yellow ſkin, and has an agreeable tartneſs[a].

It flowers moſt part of the ſummer, but not ſo freely as many other ſtove plants[b].

2. Native of Jamaica[c].]

PROPAGATION AND CULTURE.

This ſhrub is propagated by ſeeds, which muſt be procured from the country where it naturally grows. If the entire fruit be brought over in ſand, the ſeeds will be better preſerved: when they arrive in England, the ſeeds muſt be ſown in ſmall pots filled with light ſandy earth, and plunged into a moderate hot-bed of tanners bark, and now and then moderately watered. If the ſeeds are good, the plants will appear in about ſix weeks after ſowing: when, if the heat of the bed declines, the tan ſhould be turned over to the bottom, and, if neceſſary, ſome freſh added to renew the heat, for theſe plants make but little progreſs the firſt year. When the pots are plunged again into the tan-bed, they muſt have freſh air admitted to them every day in proportion to the warmth of the ſeaſon, and frequently refreſhed with water, in ſmall quantities, for much wet will certainly kill them: if the nights ſhould prove cold, the glaſſes ſhould be covered with mats every evening. As theſe plants grow ſlowly, they will not require to be removed out of the ſeed-pots the firſt year. In the autumn the pots ſhould be removed into the ſtove, and plunged into the tan-bed. During the winter, the plants ſhould be watered with great caution, and in ſpring they ſhould be carefully taken up, and each planted in a ſeparate ſmall pot filled with light ſandy earth, and plunged into a freſh hot-bed of tanners bark, being careful to ſhade them until they have taken freſh root, as alſo to refreſh them with water gently, as they may require it; and in ſummer, when the weather is warm, they ſhould have a good ſhare of air admitted to them: but in autumn muſt be removed into the ſtove, where they ſhould conſtantly remain, and muſt be treated afterward in the ſame manner as other tender exotic plants.

This plant may be propagated by planting cuttings in ſmall pots filled with light earth, during the months of june and july. The pots ſhould be plunged into a moderate hot-bed of tanners bark, and the cuttings cloſely covered with ſmall bell-glaſſes to exclude the external air. If this is properly performed, the cuttings will put out roots in about two or three months, when they may be carefully ſeparated, planting each into a ſmall pot filled with light earth, and plunged into the hot-bed again, and afterward muſt be treated as the ſeedling plants.

[1] Gærtner.

[a] Cateſby. [b] Curtis. [c] Swartz.

Moſt

Moſt of thoſe plants which were raiſed from Mr. Catesby's ſeeds, were killed by the ſevere winter in 1739; but afterwards I received ſome freſh ſeed which ſucceeded ſo well, as to enable me to communicate plants to ſeveral curious perſons in England and Holland.

[None were ſo ſucceſsful in raiſing it, as Mr. Powers, a ſkilful and curious gardener, at Mr. Blathwait's, of Derham near Bath, who raiſed a plant which flowered in 1734[a].

CATIANG. See *Dolichos*.

CATI-MARUR. See *Kleinhovia*.

CAT-MINT. See *Nepeta*.

CATRICONDA. See *Coix*.

CAT's-TAIL. See *Typha*.

——— GRASS. See *Phleum*.

CAT-THYME. See *Teucrium*.

CATTU-GASTURI. See *Hibiſcus*.

CATTU-SCHIRAGAM. See *Conyza*.

CATTU-TIRPALI. See *Piper*.

CATULLI-POLA. See *Pancratium*.

CATORUS.

*Lin. gen. Reich.* 1206. *Schreb.* 1499. *Juſſ.* 390

Claſſ. 22. 3. Dioecia Triandria.

Nat. order of *Tricoceæ*. *Euphorbiæ* Juſſ.

GENERIC CHARACTER.

* *Male.*

CAL. none.

COR. monopetalous, tubular, ſemitrifid; *diviſions* ovate, concave, acute, permanent.

STAM. *Filaments* three, capillary, longer than the corolla. *Anthers* roundiſh.

* *Female.*

CAL. *Perianth* tripartite; *leaflets* ovate, flat, permanent.

COR. none.

PIST. *Germ* villoſe. *Styles* three, long, pinnate-multifid. *Stigmas* acute.

PER. *Capſule* roundiſh, tricoccous, trilocular.

SEEDS ſolitary, round.

OBS. *I have had but an indiſtinct view of the male flowers.*

SPECIES.

1. Caturus ſpiciflorus.

*Lin. ſyſt.* 882. *Reich.* 4. 239. *mant.* 127, 519. Acalypha hiſpida. *Burm. ind.* 303. *t.* 61. *f.* 1. Watta-Tali. *Rheed. mal.* 5. 63. *t.* 32. Canda-ſelia agreſtis. *Rumph. amb.* 4. 84. *t.* 37. *Spikes axillary pendulous.*

2. Caturus ſcandens.

*Lour. cochinch.* 612.

*Spikes axillary upright, leaves oblong ſubferrate, ſtem ſcandent.*

DESCRIPTIONS, *&c.*

1. This is a tree about twenty feet in height, with many branches diffuſed all round; the wood is white and cloſe, with a thick, duſky, unctuous, inodorous back, and a yellow pith within. Leaves alternate, ſtipulaceous, roundiſh, acuminate, petioled, of a bright green above, greenith beneath, inodorous, inſipid; the midrib pale green, hairy, with a few other nerves running from it. The flowers are ſmall, of an herbaceous colour, and have two petals with two ſtamens. The fruit is a round, yellowiſh-green, inſipid berry, incloſing one round, green ſeed[b].

Native of the Eaſt Indies; where a conſerve of the flowers is uſed in the Diarrhœa and all diſorders ariſing from a laxity of the veſſels[c].

2. This is an unarmed ſhrub, with a long branching ſtem, climbing but without tendrils. Leaves acuminate, incurved, veiny, ſmooth, alternate. Flowers very ſmall, white, in cloſe, ſhort ſpikes, with ſmall, ſubulate bractes. The male flower has three petals, and three filaments longer than the petals, both diverging elaſtically.—Native of the woods of Cochinchina[d].

CATURUS KAMPLORUS. See *Bucharcia*.

CATU TSIERU. See *Limonia*.

CAVALAM. See *Sterculia*.

[a] Catesby. [b] Hort. malab. [c] Burm. & Rumph. [d] Loureiro.



CAUCALIS. (KAUKAAIΣ, *Hippocr. & Theoph. Caucalis, Plin. from the form of the ſeeds, which reſemble oblong beniſpharical veſſels.*)

[*Lin. gen. n.* 331. *Reich.* 362. *Schreb.* 464. *Gærtn. t.* 30. *Tourn.* 171. *Juſſ.* 224.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Umbellatæ*, or *Umbelliferæ*.

GENERIC CHARACTER.

CAL. *Umbel univerſal* unequal, with very few rays.

*Umbel partial* unequal, with more copious rays, of which the five exterior are longer.

*Involucre univerſal* with leaflets of the number of the rays, undivided, lanceolate, membranaceous at the edge, ovate, ſhort.

*Involucre partial* with conſimilar leaflets, longer than the rays, often five.

*Perianth proper* five-toothed, protruded.

COR. *Univerſal* diſform, radiate. *Florets* of the diſk abortive.

*Proper one* of the diſk male, ſmall. *Petals* five inflected-cordate, unequal, the exterior one very large, biſid.

STAM. in all the flowers. *Filaments* five, capillary. *Anthers* ſmall.

PIST. *Germ* of the ray oblong, rugged, inferior. *Styles* two, ſubulate. *Stigmas* two, ſpreading, obtuſe.

PER. *Fruit* ovate-oblong, with longitudinal ſtreaks, hiſpid with little rigid briſtles.

SEEDS two, oblong, convex on one ſide, armed in the direction of the ſtreaks with ſubulate points, flat on the other ſide.

OBS. *The univerſal involucre in ſome of the ſpecies it wanting.* R.

ESSENTIAL CHARACTER.

*Cor.* radiated, in the diſk male. *Petals* inflex-emarginate. *Fruit* hiſpid with briſtles. *Involucres* entire.

SPECIES.

1. Caucalis grandiflora. *Great-flowered Baſtard Parſley.*

*Lin. ſpec.* 346. *ſyſt.* 275. *Reich.* 1. 644. *mant.* 350. *Gærtn. fruct.* 1. 81. *Hall. helv. n.* 740. *Pollich pal. n.* 270. *Crantz. auſtr.* 224. *Jacqu. auſtr.* 1. 33. *t.* 54. *Krock. ſilef. n.* 403. *Ger. prov.* 237. 6. *Villars dauph.* 2. 655. *Bauh. pin.* 152. 4. *Ger. herb.* 868. *emac.* 1021. 1. *Park. theat.* 920. *f.* 1. *Mor. umb. t.* 1. *f.* 1, ξ.* *Rai hiſt.* 466. 1.

Daucus grandiflorus. *Scop. carn. n.* 308.

Echinophora. *Col. ecphr.* 1. 91. *t.* 94. *f.* 1. *Riv. pent. t.* 25.

Lappula canaria, fl. pulchro magno albo. *Bauh. hiſt.* 3. 79.

*Each involucre five-leaved, one leaflet double the ſize of the reſt.*

2. Caucalis daucoides. *Carrot-leaved Baſtard Parſley.*

*Lin. ſpec.* 346. *mant.* 351. *Gærtn. fruct.* 1. 82. *Hall. helv. n.* 739. *Leers herborn. n.* 194. *Jacqu. auſtr.* 2. *t.* 157. *Krock. ſilef. n.* 404. *Ger. prov.* 236. 3. *Villars dauph.* 2. 653.

C. leptophylla. *Lin. ſpec.* 347.

Echinophora. *Col. ecphr.* 1. 96. *t.* 97. *f.* 2. *Riv. pent. t.* 24.

*Umbels triſid leaflets, umbellules three-ſeeded three-leaved.*

3. Caucalis latifolia. *Broad-leaved Baſtard Parſley.*

*Lin. ſyſt.* 276. *Reich.* 1. 665. *mant.* 350. *hort. cliff.* 91. 1. *Ait. hort. kew.* 1. 334. *Gærtn. fruct.* 1. 81. *Huds. angl.* 113. *Wilber. angl.* 271. *Relh. cant. n.* 212. *Hall. helv. n.* 738. *Pollich pal. n.* 271. *Jacqu. hort.* 2. *t.* 128. *Ger. prov.* 237. 5. *Villars dauph.* 2. 654. *Mill. fig. t.* 85. *Riv. pent. t.* 26.

Tordylium latifolium. *Lin. ſpec.* 345. *Mill. dict. n.* 8.

C. arvenſis echinata latifolia. *Bauh. pin.* 152. *Rai hiſt* 468. *ſyn.* 219. *Ger. emac.* 1021. 2. *Park. theat.* 920. *Mor. hiſt. ſ.* 9. *t.* 14. *f.* 2. *row.* 1. *Petiv. brit. t.* 27. *f.* 6.

Echinophora. *Col. ecphr. t.* 97. *f.* 1.

Lappula canaria latifolia. *Bauh. hiſt.* 3. 80. *f.* 2.

*Involucres and involucrets membranaceous, univerſal umbel with about four rays; briſtles of the ſeeds cluſtered and biſpid, leaves pinnate gaſhed and hairy.*

4. Caucalis mauritanica. *Barbary Baſtard Parſley. Lin. ſpec.* 347. *Reich.* 1. 666.
*Univerſal involucre one-leafed, partial involucres three-leaved.*

5. Caucalis orientalis. *Eaſtern Baſtard Parſley. Lin. ſpec.* 347. *ſyſt.* 276. *Reich.* 1. 666. *mant.* 351. *Lour. cochinch.* 177. *Bellon. it.* 3. 49. *t.* 200. *Mor. hiſt.* 3. 308. *ſ.* 9. *t.* 11. *f.* 5.
*Umbels ſpreading, partial leaflets ſuperdecompound laciniated, ſmall droſſons linear.*

6. Caucalis leptophylla. *Fine-leaved Baſtard Parſley. Lin. ſyſt.* 276. *mant.* 351. *Hall. helv. n.* 742. *Ger. prov.* 236. 2. *Villars dauph.* 2. 653.
C. pumila. *Jacqu. hort.* 2. 92. *t.* 195.
C. daucoides. *Huſſ. angl.* 112. *Wither. arr.* 271. *Relh. cant. n.* 211.
C. arvenſis echinata parvo flore & fructu. *Bauh. pin.* 152. 5.
C. tenuifolia floſculis ſubrubentibus. *Rati hiſt.* 467. (non deſcr.) *ſyn.* 219.
Lappula canaria ſ. minore ſ. tenuifolia. *Bauh. hiſt.* 3. 2. 80. *Mor.* 305. *t.* 13. *f.* 3.
*Univerſal involucre ſcarcely any, umbel biſid, involucrets five-leaved.*

7. Caucalis arvenſis. *Corn Baſtard Parſley. Huſſ. angl.* 113. *With.* 272. *Relh. n.* 213. *Ait. hort. kew.* 1. 334. *Hall. helv. n.* 742.
C. helvetica. *Lin. ſyſt.* 276. *Jacqu. hort.* 3. 12. *t.* 16.
C. inteſta. *Curtis lond. n.* 62.
C. ſegetum minor Anthriſco hiſpido ſimilis. *Rati hiſt.* 468. *ſyn.* 220.
C. arvenſis humilior ramoſior. *Mor. hiſt.* 3. 338.
C. pumila ſegetum Goodyero. *Ger. emac.* (Ray).
*Univerſal involucre ſcarcely any, ſeeds ovate, ſtyles reflex, leaves decompound, outmoſt leaflet linear-lanceolate, ſtem branching very much.*

8. Caucalis Anthriſcus. *Hedge Baſtard Parſley. Huſſ. angl.* 114. *Curtis lond. n.* 63. *Wither. arr.* 272. *Relh. cant. n.* 214. *Ait. hort. kew.* 1. 335. *Scop. carn. n.* 311. *Hall. helv. n.* 741. *Ger. prov.* 238. 8. *Villars dauph.* 2. 652.
Tordylium Anthriſcus. *Lin. ſpec.* 346. *ſyſt.* 275. *Reich.* 1. 663. *ſuec. n.* 236. *mant.* 350. *Pollich pal. n.* 296. *Leers herborn. n.* 196. *Jacqu. auſtr.* 3. 34. *n.* 261. *Wither. arr.* 270. *Mill. dict. n.* 7.
Caucalis ſemine aſpero, floſculis rubentibus. *Bauh. pin.* 153. *prodr.* 80.—minor, floſc. rubent. *Ger. emac.* 1022. 5. *Park. theat.* 921. 9. *Mor.* 9. 14. 8. *Rati hiſt.* 468. *Petiv. brit. t.* 27. *f.* 9.—ſem. aſp. hiſpido. *Bauh. hiſt.* 3. 2. 83. 1. *Rati ſyn.* 219.
*Involucres many-leaved, ſeeds ovate, ſtyles reflex, leaves decompound, outmoſt leaflet linear-lanceolate.*

9. Caucalis nodoſa. *Knotted Baſtard Parſley. Huſſ. angl.* 114. *Wither. arr.* 273. *Relh. cant. n.* 215. *Ait. hort. kew.* 1. 335. *Scop. carn. n.* 313. *Villars dauph.* 2. 653. *Ger. prov.* 235. *Jacqu. auſtr.* 5. *app. t.* 24. *Riv. pent. t.* 36.
Tordylium nodoſum. *Lin. ſpec.* 346. *ſyſt.* 275. *Reich.* 1. 663. *Mill. dict. n.* 6.
Toriſis nodoſa. *Gærtn. fruct.* 1. 82.
Caucalis nodoſa echinato ſemine. *Bauh. pin.* 153. *prodr.* 80. *Bauh. hiſt.* 3. 2. 83. 2. *Ger. emac.* 1022. 6. *Park. theat.* 921. *Mor. hiſt.* 9. 14. 10. *Pet. brit. t.* 27. *f.* 11. *Rati hiſt.* 468. *ſyn.* 220.
*Umbels ſimple ſubſeſſile, leaves ſuperdecompound.*

[DESCRIPTIONS, &c.

1. Stem very ſmooth and even, two feet in height and branched. Leaves like thoſe of Carrot, decompound with very ſmall narrow leaflets, even, but rugged underneath. Involucres white about the edge: univerſal two or three to five or ſix-leaved; leaflets unequal, lanceolate, membranaceous, permanent: partial frequently five-leaved, with three leaflets large and two ſmall; but ſometimes they have only three or four leaflets. Umbels, but not the umbellets, radiate. Many floreta of the diſk barren. Petals white, the outer one remarkably large, biſid almoſt to the baſe[a]. Fruit nearly of the ſame ſize as in the third ſort, but not gibbous like that, or tranſverſely broader, but rather compreſſed or flatted, having four thick dorſal ribs, armed with ſtiff, aſcending, pungent ſpines, alternate or in pairs; and between theſe, three furrows, in which are minute, ſhort, briſtle-ſhaped prickles, divaricated and bent in upwards[b]. The flat ſeeds of this ſpecies connect this genus with *Torilis*, as *C. Anthriſcus* (n. 8.) does with *Daucus*. The ſtem varies in different ſituations, ſometimes being two feet high, ſtraight, and branching only at top; ſometimes much lower, and branching from the very bottom[c].

It is a native of the South of Europe: was introduced in 1775, by Joſeph Nicholas de Jacquin, M. D. and flowers in July and auguſt[d].

2. Stem a foot high, upright, angular-grooved, branched and even, the joints white with briſtles. Leaves ſuperdecompound; petioles membranaceous at the baſe; both they and the leaves having white briſtles thinly ſcattered over them: pinnules pinnatifid, narrow, bluntiſh, bifid or trifid at the tip. Univerſal umbel of three, ſtrong, four-cornered rays: partial of five, ſeven, or nine rays, of which the outer are ſtronger and bear fruit; but the central ones are more ſlender, and barren. Involucre ſometimes a ſingle lanceolate leaflet, but commonly none, and inſtead of it a heap of white briſtles. Involucret halved, three-leaved, ſpreading; leaflets lanceolate, the length of the floreta. The three outmoſt flowers larger, hermaphrodite, fertile; the central ones (two to four and ſix) male and barren. Segments of the calyx lanceolate, the two outmoſt larger than the others. Petals obcordate, emarginate, purpliſh, unequal, the outmoſt three times the ſize of the reſt. Stamens the length of the petals. Germ rugged. The male flowers have none, with a ſmooth calyx. Each umbellet has three, diſtant, oblong, fruits, crowned with the calyx[e]. They are of a middle ſize, and compoſed of two oblong, ſemicylindric ſeeds. They have four thick dorſal ribs, armed with ſtiff, ſpreading, pungent prickles, ſomewhat remote; between the ribs are narrow chinks, from which very minute briſtle-ſhaped ſpinules ſometimes ſpring[f].

Native of the South of Europe.

3. This is the moſt beautiful of our native umbelliferous plants. Stem from a foot to eighteen inches or ſometimes near two feet in height, branched, angular, ſet with ſhort prickles pointing upwards. Leaves ariſing from a membranaceous ſheath, pinnate, the midrib rough like the ſtem; leaflets lanceolate, ſerrate; the lower ones almoſt pinnatifid, the upper ones confluent with the midrib. Peduncles rugged. Umbel of three or four rays. Umbellets ſeſſile, generally with five fruits. Corolla purpliſh, the outer petal large, the reſt ſmall. The barren flowers are ſmaller and leſs irregular. The univerſal involucre is three-leaved, and the partial five-leaved; both are membranaceous[g]. Fruit ovate, compoſed of two, largiſh, ovate, gibbous ſeeds, muricated with ſeven creſts; three broader and thicker, armed with a double row of ſtiff pungent prickles; the other four a little narrower, with a ſingle row of prickles only; the belly flattiſh, with a raiſed ſtreak along the middle, channelled near the baſe[h].

Native of Germany, Switzerland, Italy, France, and England. It is one of our rare plants, and has been obſerved in Cambridgeſhire and Hampſhire, in corn fields; flowering from june to auguſt.

4. Native of Barbary[i].

5. Stem herbaceous, round, ſtraight, ſtreaked, branching, three feet high. Leaves pinnate-gaſhed, jagged, ſmooth. Umbels ſpreading: the rays of the univerſal umbel long and unequal, of the partial very ſhort. Involucres entire, ſubulate, ſhorter than

[a] Haller. Pollich. Scopoli. Krocker. Villars. Linn. mant.
[b] Gærtner.
[c] Villars.
[d] Host. kew.
[e] Leers.
[f] Gærtner.
[g] Woodv. Mill.
[h] Gærtner.
[i] Linn.

the ray. Flowers floſculous, almoſt naked. Fruit ovate-oblong, echinate-hiſpid [a], with briſtles which ſtand out, and have viſcid glands at the end [b].

Native of the Levant and China.

6. Stem low, round, rugged backwards. Leaves bipinnate, rugged with hairs. Umbellets five-flowered, not radiate, purpliſh white, with one or two barren florets. Fruit ovate, hiſpid with prickles in whorls three-pronged at the end [c].

Gerard (in ſt. Gallo-provinc.) thus deſcribes it. Stem round, rugged, divaricate. Leaves pinnate, leaflets pinnatifid, with gaſhed ſegments. Umbel bifid, without an involucre. Involucrets with five linear, acute leaflets. Flowers ſeſſile, fertile, few. Petals unequal, the outer or larger ones bifid. Fruits hiſpid, ſmall, with hooked prickles, on ſhort thick pedicels.

According to Mr. Woodward, who ſuſpected our plant to be C. leptophylla; *ſyſt. veget.* and not C. daucoides; the ſtalks are angular, and rough if drawn through the hand: leaves ſuperdecompound, and extremely elegant. Univerſal umbel of three or four rays, without any involucre: partial the ſame number: involucrets moſtly five-leaved. Seeds large, covered with ſtrong hairs hooked at the extremity.

Native of the South of Europe, and of England, in corn fields and by way ſides. In Cambridgeſhire, Lincolnſhire, Norfolk, *&c.* Flowering in june and july.

7. Stem ſingle, from ſix inches to two feet high, but very ſeldom more than a foot or eighteen inches; dividing near the bottom into numerous, alternate, angular branches, ſpreading very much, a little crooked, below ſmooth and reddiſh, above roughiſh with minute, ſhort, appreſſed hairs, ſtriated and green. Leaves alternate, ſeſſile, ſomewhat remote, turned down a little at the tip, petioled, pinnate, ſlightly hirſute on both ſides with minute white hairs, of a dull green uſually turning purple: leaflets three, five or ſometimes ſeven, oppoſite, lanceolate, ſerrate, hairy; the outmoſt very long, the loweſt petioled and more diſtant than the others, the upper ones confluent. Flowers white with a caſt of yellow, ſmall and without ſcent; in the diſk male. Univerſal umbel with three, four, or five rays: partial crowded, convex. Univerſal involucre of one ſhort, ſubulate leaf, or none: partial of five linear-ſubulate, appreſſed leaflets, ſlightly hirſute, and almoſt the length of the umbellet. Anthers purpliſh. Germ hiſpid with hairs red at the tips [d]. Seeds ovate-oblong, with hairs curved upwards, rugged with minute points, and generally terminated by a hooked point [e].

This ſpecies ſeems not to have been diſtinguiſhed by old writers from the next following. Goodyer appears firſt to have noticed it, and Ray firſt diſcriminated them thus: 1. that is taller, being frequently three feet high: this ſeldom exceeding a foot, certainly not a cubit. 2. That is more upright with longer internodes; this twiſted and diffuſed, with more frequent joints. 3. That has the ſtalk near the ground more hirſute. 4. The florets of that are white or very pale red, with almoſt equal petals, and purple anthers; the petals of this incline to yellow, the two outer ones are evidently larger than the three inner ones, and the anthers are white. 5. The ſeeds of this are much larger, with the permanent ſtyles green; the ſeeds of that are far more fragrant and aromatic, of a darker colour, with purple ſtyles. Finally, that is ſeldom found except in hedges and among buſhes; whereas this commonly grows among corn, never in hedges [f].

If it be n. 742. of Haller, which I doubt, it is wild in Switzerland, probably it is common in other countries as well as England; but it has not been diſtinguiſhed from the Anthriſcus. Ray refers to Goodyer and Johnſon's edition of Gerarde's herbal for this plant; but I cannot find any mention of it in that work. Neither he nor Curtis give the page.

8. Stem from four to ſix feet high, upright, ſomewhat flexuoſe, round, purpliſh, rough, covered with minute, white, rigid briſtles, preſſed downwards to the ſtem, and ſcarcely viſible. Branches numerous, alternate, and nearly upright. Leaves few, nearly a hand breadth in length, diſtant, ſpreading greatly, turned downwards at the tips, on petioles which are hollowed above, broader at the baſe and ſomewhat ſheathing: pinnas three or four pairs with an odd one, ovate, pointed, the lower ones petioled and broader, the upper ones ſeſſile, ſhorter, narrower, the outermoſt very long, linear-lanceolate: leaflets gath-ſerrate, a little pointed, covered with very minute yet viſible briſtles. Univerſal umbel flattiſh, thin, unequal, with about eight rays: partial a little thicker, ſomewhat convex, unequal, with about twelve or more rays, the outermoſt longeſt, all hiſpid with briſtles preſſed upwards. Univerſal involucre many-leaved, (five to eight) about half the length of the rays, the leaves uſually as many as the rays, linear, pointed, the margin membranous and white: partial alſo of many leaves ſimilar to the others, preſſed to the rays, the length of the umbellets. Univerſal corolla difform, radiate. Florets white or reddiſh, without ſcent: thoſe of the diſk ſmall, equal and male; thoſe of the ray hermaphrodite, very widely ſpreading, on the under ſide ſlightly villoſe; the outmoſt ſomewhat larger and bifid. Anthers ſmall, double, purple. Germ oblong, hiſpid. Fruit ſmall, ovate, ſlightly flattened: ſeeds on one ſide gibbous, with three grooves, hiſpid with rigid briſtles, white or red, curved upwards; on the other ſide marked longitudinally with one ſmooth hollow groove.

The preſence of the involucre is a ready diſtinction of this from the foregoing ſort, which it reſembles very much; but it is ſometimes ſo cloſely preſſed to the rays, as not to be immediately viſible; the ſtyles too, in general, are bent or bowed backed to a greater degree in this [g].

It is common in hedges and buſhes, flowering in july and auguſt.

Dr. Withering ſays, that horſes are fond of it.

9. Stems two, three or more, round, ſtriated, rough, branched, commonly proſtrate, from a ſpan to a cubit in length. Leaves ſomewhat like thoſe of Parſnep, but ſhorter and fewer, and much more finely cut, winged, ſlightly hairy on each ſide, very dark green [h]. The whole plant is rigid. Umbels ſimple, almoſt ſeſſile, oppoſite to the leaves, with white florets crowded together on unequal rays. Fruit ſubglobular, hiſpid: ſeeds ſemiovate, very gibbous; thoſe on the outſide echinated all over with briſtle-ſhaped, rugged prickles, ſlightly hooked at the end; thoſe in the centre rugged with rough tubercles, like ſhagreen, terminating here and there in ſhort prickles; the belly narrow, with a furrow along it [i]. The umbels are ſometimes on ſhort pedunclesk.

Native of the South of Europe, and of England, on the borders of corn fields and on banks; flowering from may to auguſt. Johnſon (in Gerarde) marks it as growing in the fields and on the banks about St. James's and Piccadilly.

I have retained the old Engliſh name of Buſtard-Parſley for theſe plants. Gerarde ſays, they are alſo called Hen's-foot.

PROPAGATION AND CULTURE.

Theſe plants are all annual, or at moſt biennial, and are ſeldom cultivated, except in botanic gardens. They will riſe readily from ſeeds, where they are permitted to ſcatter: or if any perſon be deſirous of raiſing them, the ſeeds ſhould be ſown in autumn, ſoon after they are ripe. They will grow in any ſoil and ſituation.

CAUCALIS. See *Canium*, *Daucus*, *Echinophora*, *Sanicula*, *Scandix*, *Tordylium*.

CAULIFLOWER. See *Braſſica*.]

[a] Loureiro. [b] Linn. mant. [c] Ibid. [d] Curtis. [e] Stokes in Withering. [f] Hiſt. 468. [g] Curtis. [h] Ray hiſt. [i] Gartner. [k] Woodw. Mſ.

CEANOTHUS. (Κεανοθος of *Theophrastus*.)
*Lin. gen. n.* 367. *Reich.* 286. *Schreb.* 361. *Gærtn. t.* 106. *Juss.* 380.
Class. 5. 1. Pentandria Monogynia.
Nat. order of *Dumosæ*. *Rhamni* Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, turbinate; *border* five-parted, acute, close-converging, permanent.
COR. *Petals* five, equal, roundish, of an arched facular shape, compressed, very obtuse, spreading, smaller than the calyx, seated on claws the length of the petal, growing from the interstices of the calyx.
STAM. *Filaments* five, subulate, erect, opposite to the petals, the length of the corolla. *Anthers* roundish.
PIST. *Germ* superior, triangular. *Style* cylindric, semitrifid, the length of the stamens. *Stigma* obtuse.
PER. *Berry* (capsule, *G.*) dry, three-grained, three-celled, obtuse, retuse, set with tubercles.
SEEDS solitary, ovate.
OBS. C. Africanus *differs in the calyx being half five-cleft, and the style consisting of three conjoined, and with three stigmas.*

ESSENTIAL CHARACTER.

*Petals* five, facular, vaulted. *Berry* dry, three-celled, three-seeded.

SPECIES.

1. Ceanothus americanus. *American Ceanothus* or *New Jersey Tea.*
*Lin. spec.* 284. *Reich.* 549. *mant.* 69. *Trew. ehret. t.* 94. *Pluck. it. t.* 143. *Mill. fig. t.* 86. *Duham. arb.* 1. 138. *t.* 51. *Gron. virg.* 37. *Gærtn. fruct.* 2. 110.
Euonymus novi belgii, Corni feminæ fol. *Comm. hort.* 1. 167. *t.* 86. *Raii dendr.* 69. *Pluk. alm. t.* 28. *f.* 6.
*Leaves three-nerved.*
[2. Ceanothus asiaticus. *Asiatic Ceanothus.*
*Lin. spec.* 284. *Reich.* 1. 550. *β. zeyl. n.* 98. *Thunb. jap.* 95. *Burm. zeyl.* 111. *t.* 48.
*Leaves ovate nerveless.*]
3. Ceanothus africanus. *African evergreen Ceanothus.*
*Lin. spec.* 284. *Jacq.* 236. *Reich.* 1. 550. *mant.* 342. *hort. cliff.* 73. (Celastrus.) *Pluk. phyt. t.* 126. *f.* 1. *Comm. prael.* 61. *t.* 11. (Alaternoides.) *Seba, thes.* 1. 35. *t.* 21. *f.* 6. (Ricinoides.)
*Leaves lanceolate nerveless, stipules roundish.*
[4. Ceanothus reclinatus.
*L'Herit. sert.* 6.
Rhamnus. *Breyn. jam.* 272. *n.* 1. *t.* 29. *f.* 2.
*Leaves ovate entire many-nerved, branches hanging down.*
5. Ceanothus circumscissus.
*Gærtn. fruct.* 2. 110.
Rhamnus circumscissus. *Lin. Jacq.* 233. *suppl.* 152.
*Leaves obcordate opposite in two rows, prickles solitary recurved opposite to the leaves.*
6. Ceanothus capsularis.
*Forst. fl. austral. n.* 112.
*Leaves ovate-lanceolate acuminate serrate, capsules three-valved gaping.*]

DESCRIPTIONS, &c.

1. In England this shrub seldom rises more than three or four feet high, sending out branches on every side from the ground upward. The branches are very slender, and as it is pretty late in the spring before they begin to shoot, they keep growing very late; therefore, unless the autumn proves dry and mild, the tender shoots are often killed down very low by the early frosts; but in favourable seasons, the extreme parts of the shoots only are injured by the cold. These branches are garnished with oval pointed leaves, having three longitudinal veins running from the foot-stalk to the point, and diverging in the broad part of the leaves from each other: the leaves are placed opposite, are deciduous, and of a light green colour. At the extremity of each shoot the flowers are produced in close thick spikes, and are composed of five small petals, of a clear white. These appear in july, and make a pretty appearance during their continuance: but, as every shoot is terminated by one of these spikes, the whole shrub is covered over with flowers, the branches commonly growing very close to each other; and when the autumn proves mild, these shrubs often flower again in october.

[The fruit, according to Gærtner, is a corticated, three or four-grained capsule. The rind, before it is ripe, is soft and fleshy, but afterwards dries into a thin skin, forming spongy tubercles and very narrow crells on the head and back of the grains. These are cartilaginous, thin, extremely smooth within, opening elastically by the internal suture, and receding from each other spontaneously when ripe. The seeds are ovate-rounded, convex on one side, very obscurely angular on the other, of a shining bay colour.]

Native of most parts of North America, as Canada, New England, Pensylvania, Virginia, and Carolina. It is there known by the name of New Jersey Tea: the leaves being dried for the same purpose as Tea. The Canadians use the root in venereal cases; and the cattle browzing upon the shrub, keep it very low. [It dyes wool a fine brown Nankin cinnamon colour.

This shrub was cultivated before 1713 by Bishop Compton, in the episcopal garden at Fulham, and in Mr. Derby's garden at Hoxton. For several years after, it was lost in England, but has since been recovered from America, so as to be now pretty common in most of our curious gardens and nurseries[a].

2. Branches alternate, flexuose, striated, smooth. Leaves alternate, resembling those of the Pear, acuminate, smooth, veined, crenate, unequal, aggregate at the ends of the small branches, scarcely an inch in length, on petioles half the length of the leaves. Racemes from each axilla usually two, small, the length of the petioles, consisting of many florets, on very short pedicels, they are caducous, one often remaining which bears fruit: hence the raceme is toothletted from the falling of the flowers. Berries large, closely embraced at the base by the calyx[b].—Native of Ceylon and Japan. Introduced in 1781[c].

Jussieu doubts whether the *Tubanthera* of Commerson, which is the same with the *Katapa*, Hort. malab. 5. t. 47. and perhaps also with this *C. asiaticus* of Linneus, be of a different genus. According to Commerson, the petals are short rolled up with the stamens and tubular, there is scarcely any style, the peduncles are axillary and many-flowered.]

3. The third sort grows naturally at the Cape of Good Hope, from whence it was originally brought to Holland, and has been many years preserved there; and since has been communicated to most of the curious gardens in Europe, where it has been long known by the title of Alaternoides, &c.

This rises to the height of ten or twelve feet, with a woody stem, covered with a rough dark-coloured bark, and sends out many weak branches, which hang downward: these while young are green, but afterward change to a purplish colour. They are garnished with oblong pointed leaves, of a lucid green, smooth, and slightly serrate on their edges. The flowers are small, of an herbaceous colour, coming out from the side of the branches; these sometimes appear in july, but are not succeeded by seeds in this country, nor do the plants often produce flowers; so that they are preserved only for the beauty of their shining evergreen leaves, which make a variety in the green-house during the winter season.

[It was cultivated here in 1712[d].

4. This having a juiceless fruit, absolutely that of *Ceanothus*, with vaulted petals, though shorter than in *C. americanus*, is referred by Mons. L'Heritier to this genus rather than to that of *Rhamnus*. He is however of opinion, that the whole genus of *Ceanothus* might with more propriety be united with *Rhamnus*.—It is a native of Jamaica[e].

[a] Mill. fig. [b] Linn. zeyl. & Thunb. jap. [c] Bot. rep. [d] Ibid. [e] Sert. angl.

5. Branches

5. Branches simple, opposite, spreading very much, angular, even. Prickles solitary, opposite, fixed, horizontal, curved back, solid. Leaves petioled, even, obscurely toothed. Petioles the length of the spines. Stipules in pairs very minute. Fructifications lateral, without prickles, umbelled, a little longer than the petioles, simple. Calyx bell-shaped, circumcised: border upright, five-parted; teeth sharp, deciduous. Petals inserted into the calyx, obcordate, ciliate, snow-white, involving the anthers. Filaments alternate, a little shorter than the calyx: anthers upright, oblong. Style short, permanent: stigma emarginate[1]. Pericarp a subglobular capsule, closely adhering to the rounded disk of the calyx, rounded-three-cornered, three-celled, not opening by three valves without pressure. Partitions simple, inserted into the middle of the valves, the substance of paper. Seeds solitary, roundish, convex on one side, obscurely angular on the other, reticulous or dark brown, not shining; covered with a crustaceous, thick, hard outer skin, the inner very thin and bay-coloured[2].

Native of the East-Indies, Ceylon, and Mauritius.

This species is a connecting link between *Ceanothus*, *Rhus* and *Rhamnus*, but having a dry fruit, opening by pressure into three regular valves, it seems to approach nearer to the former, and therefore I have followed Gaertner in placing it here.

6. Native of Otaheite[3]. ]

PROPAGATION AND CULTURE.

1. This shrub is best propagated by seeds, which should be sown in the autumn in small pots, and plunged into an old hot-bed, where they may remain during the winter, exposing them in mild weather to the open air, but in frost they must be protected from cold. In march the pots should be plunged into a moderate hot-bed to bring up the plants, which should be inured to bear the open air by degrees; and as soon as they have obtained a little strength, they should be exposed in a sheltered situation till autumn, when they must be placed under a hot-bed frame, to screen them from severe frost in winter; in mild weather they should be fully exposed to the open air, but while the plants are young, they will not endure the cold of the winter. In the following spring, before the plants begin to shoot, they should be transplanted; some of them may be put into separate pots, and the others into a nursery-bed, in a warm situation, where they may remain a year or two to get strength, after which time they may be removed to the places where they are designed to remain. They should have a moderately dry soil and a sheltered situation, where they will thrive and flower extremely well; but in stiff cold land, they are always very late in the spring before they come out, so that their young shoots are full of sap in the autumn, and the first frost commonly kills their tops, which frequently causes them to die great part of their length.

It may also be propagated by laying down the young branches, which, in a light soil, will put out roots in a year's time, but these layers should not be much watered, for as the shoots are tender, moisture will often occasion their rotting, when it is given in quantities, or too often repeated: therefore the best method is to cover the surface of the ground in dry weather, all round the layers, either with mulch or rotten tan, which will preserve a sufficient moisture in the ground, provided the season is not extremely dry; in which case they should have a little water once in eight or ten days, which will be sufficient.

The best time for laying down these branches is in autumn; and if after this is performed, the surface of the ground is covered over with some old tan, taken from a decayed hot-bed, it will prevent the frost from penetrating the ground, which will secure them from injury; and the same covering will prevent the winds from drying the ground in the spring, and thereby promote their putting out roots. These layers, when rooted, may be taken up the following spring, and treated in the same manner as those raised from seeds.

[2. The second may be increased by layers or cuttings, and must have the protection of the bark-stove.]

3. The third may be propagated in the same ways, but that by cuttings being most sure and expeditious is generally preferred. They should be planted in spring in pots filled with good kitchen-garden earth, and plunged into a very moderate hot-bed, observing to shade them in the heat of the day, and now and then to refresh them with water. In two months, or less, they will have taken root, when they must be gradually inured to the open air, placing them in a sheltered situation till they have obtained strength, when they may be separated, and each planted in a small pot filled with light earth, placing them in the shade till they have taken fresh root; then they may be removed, and intermixed with other exotic plants, and treated in the same manner.

CEANOTHUS. See *Sericanda arvensis*.

CECROPIA.

*Lin. gen.* n. 1049. *Reich.* 1300. *Schreb.* 1492. *Juss.* 402. *Lam.* 372. Coilotapalus. *Brown.*

Class. 22. 2. Dioecia Diandria.

Nat. order of *Scabridae*. *Urticae Juss.*

GENERIC CHARACTER.

* *Male.*

CAL. *Spathe* ovate, bursting, caducous, containing *Aments* very many, fasciculate, columnar, imbricate with scales: the *scales* (receptacles) copious, turbinate, compressed-quadrangular, obtuse, with a double perforation.

COR. none, unless the scales be called nectaries.

STAM. *Filaments* two, capillary, very short, from the perforations of the scales. *Anthers* oblong quadrangular.

* *Female.*

CAL. Spathe

*Aments* four, columnar, imbricate with germs.

COR. none.

PIST. *Germs* many, imbricate, compressed-quadrangular, obtuse. *Styles* solitary, very short. *Stigmas* somewhat headed, lacerated.

PER. *Berry* the form of the germ, one-celled, one-seeded.

SEED oblong, compressed.

ESSENTIAL CHARACTER.

MALE. *Spathe* caducous. *Ament* imbricate with turbinate scales, compressed-quadrangular. *Cor.* none.

FEM. as in the male. *Germs* imbricate. *Style* one. *Stigma* lacerated. *Berry* one-seeded.

SPECIES.

1. Cecropia peltata. *Trumpet-tree*, or *Snake-wood*. *Lin. spec.* 1449. *Jacq.* 878. *Reich.* 4. 221. *mant.* 499. *amoen.* 5. 410. *Lam.* *ill.* 372. *Jacq. obs.* 2. t. 46. *fig.* 4. *amer. pict.* 126. t. 262. *f.* 66. Coilotapalus. *Brown. jam.* 111.

Ficus farinamentis, &c. *Pluk. alm.* t. 243. *f.* 5.

Yaruma Oviedi. *Sloan. jam.* 1. 137. t. 88. *f.* 2. & t. 89.

Ambaiba. *Marcgr. bras.* 91. *Pis. bras.* 147. *Raii hist.* 1373.

DESCRIPTION, *&c.*

[This tree rises commonly to a considerable height, being seldom under thirty-five or forty feet in the most perfect state. The trunk and branches are hollow every where, and stopped from space to space with membranous septa, answering to so many light annular marks in the surface[1]. Leaves few, alternate, large, at the ends of the branches; they are peltate, divided into many lobes like those of *Carica Papaya*, downy-white underneath, petioled, lobes entire, sharp, rugged on the upper surface, the nerves obliquely transverse, and the veins very much so. There are stipules between the leaves, as in the *Fig*, opening on the side opposite to the leaf, obvolute or

[1] Linn. *Suppl.* [2] Gaertner. [3] Forster.

[1] Brown.

imbricate

imbricate on the edge, ſoon falling off[a]. The fruits riſe four, five or more from the very top of a common peduncle, and ſhoot into ſo many oblong cylindric berries, compoſed of a row of little *acini*, ſomething like our Raſpberry, which they reſemble in flavour when ripe, and are agreeable to moſt European palates on that account.

The wood of this tree, when dry, is very apt to take fire by attrition. The native Indians have taken the hint, and always kindle their fires in the woods by rubbing a piece of it againſt ſome harder wood. [The bark is ſtrong and fibrous, and is frequently uſed for all ſorts of cordage. The trunk is very light, and for that reaſon much uſed for barklogs and fiſhing-floats. The ſmaller branches, when cleared of the ſeptums, ſerve for wind inſtruments. Both trunk and branches yield a great quantity of fixed ſalt, which is much uſed among the French, to deſpumate and granulate their ſugars. The fruit is much fed upon by pigeons and other birds, and thus the tree is much ſpread and propagated[b].

Native of South America; Jamaica, and other Weſt India iſlands.]

Mr. Miller received ſpecimens of this tree from Dr. Houſtoun, who found it growing naturally at La Vera Cruz in New Spain. [It does not appear however that he ever cultivated it. In the catalogue of the royal botanic garden at Kew, it is ſaid to have been introduced in 1778, by Thomas Clark, M. D.]

PROPAGATION AND CULTURE.

It may be propagated by ſeeds, procured from the places of natural growth. They ſhould be brought over in ſand, for if they are put up moiſt in papers, they will be apt to grow mouldy.

They ſhould be ſown in ſmall pots filled with light earth, and plunged into a moderate hot-bed of tanners-bark, obſerving to water the pots duly, and to admit freſh air whenever the weather is favourable. When the plants come up and are fit to tranſplant, they ſhould be carefully taken up, and each planted in a ſeparate ſmall pot filled with the like light earth, and plunged into the hot-bed again, being careful to water them to ſettle the earth to their roots, and alſo to ſcreen them from the ſun till they have taken new root: after which they ſhould be conſtantly kept plunged into the bark-bed in the ſtove, and treated in the ſame manner as other plants from the ſame country.

CEDAR, Barbadoes. See *Cedrela*.
——— Bermudas, } See *Juniperus*.
——— Carolina. }
——— Jamaica. See *Theobroma*.
——— Libanus or Lebanon. See *Pinus Cedrus*.
——— Lycian, }
——— Phœnician, } See *Juniperus*.
——— Virginian. }
——— White. See *Cupreſſus*.

[CEDRELA.
*Lin. gen. n.* 277. *Reich.* 297. *Schreb.* 383. *Juſſ.* 266. *Gærtn. t.* 95. Cedro. *Loeſl.* 183. Cedrela. *Brown. t.* 10. *f.* 1.
Claſſ. 5. 1. Pentandria Monogynia.
Nat. order of *Miſcellaneæ*. *Meliæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* monophyllous, campanulate, very ſmall, five-toothed, withering.
COR. Funnel-form, pentapetalous, the *tube* bellied below. *Petals* linear-oblong, obtuſe, erect, adjoined to the receptacle at one-third beneath.
STAM. *Filaments* five, ſubulate, ſeated on the receptacle, ſhorter than the corolla. *Anthers* oblong, bent outwards at the tip.
PIST. *Receptacle proper* five-cornered. *Germ* globular. *Style* cylindric, length of the corolla. *Stigma* headed, depreſſed.
PER. *Capſule* ſuperior, woody, roundiſh, five-celled, five-valved; valves deciduous.

[a] Linn. amoen. & Loefling. [b] Browne.

SEEDS numerous, fleſhy, imbricate downwards, terminated by a membranaceous wing. *Receptacle* woody, five-angled, free.

OBS. *This genus may be compared with* Swietenia.

ESSENTIAL CHARACTER.

*Cal.* withering. *Cor.* five-petalled, funnel-form, faſtened by the baſe to the receptacle to one-third of its length. *Capſ.* woody, five-celled, five-valved. *Seeds* imbricate downwards, with a membranaceous wing.

SPECIES.

1. Cedrela odorata. *Barbadoes Baſtard Cedar. Lin. ſpec.* 289. *Reich.* 562. *Loeſ. it.* 183. *Gærtn. fruct.* 2. 84. *Brown. jam.* 158. *t.* 10. *f.* 1.] *Plak. alm. t.* 157. *f.* 1.
Cedrus odorata. *Mill. dict. n.* 1.
[Pruno affinis arbor, &c. *Sloan. jam.* 2. 128. *n.* 19. *t.* 220. *f.* 2. *Raii dendr.* 43. *n.* 8.
*Flowers panicled.*]

DESCRIPTION, &c.

This tree riſes with a ſtraight ſtem to the height of ſeventy or eighty feet, while young the bark is ſmooth, and of an Aſh-colour; but as it advances, the bark becomes rough and of a darker colour. Toward the top it ſhoots out many ſide branches, garniſhed with winged leaves, compoſed of ſixteen or eighteen pair of leaflets, ſo that they are ſometimes near three feet long; the leaflets are broad at their baſe, and are near two inches long, blunt at their ends, and of a pale colour; theſe emit a very rank odour in the ſummer ſeaſon, ſo as to be very offenſive. The fruit is oval, about the ſize of a partridge's egg, ſmooth, of a very dark colour, and opens in five parts, having a five-cornered column ſtanding in the middle, between the angles of which the winged ſeeds are cloſely placed, lapping over each other like the ſcales of fiſh.

[According to the deſcription of Loefling, the leaves are alternate; leaflets oblong-acute, ſmooth, entire, ending in a narrow point. Peduncle round, ſlightly compreſſed above, clavated at the baſe; pedicels round, oppoſite. Flowers on a very branching raceme, panicled, the branches ſpreading very much; the branchlets alternate, ſomewhat remote, bearing two or three flowers. Corollas whitiſh fleſh colour, liliaceous, reſembling that of Hyacinth.

The fruit is a capſule continued from a woody peduncle and woody itſelf, brown with irregular pale ſpots, appearing as it were leprous, within of a reddiſh bay colour, the valves opening from the top, but permanent at the baſe, and not falling. The top ſeeds are elliptic, the middle ones oblong-ovate, the lower ones ovate-lanceolate, all ferruginous-cinnamon colour, with a nucleus at top, and terminating below in a membranaceous wing[a].

The trunk is covered with a rough bark, marked with longitudinal fiſſures. This, as well as the berries and leaves, has a ſmell like Aſſa-fœtida, when freſh. The timber however has a pleaſant ſmell[b].]

This is commonly known under the name of Cedar in the Britiſh Weſt India iſlands. The trunk is ſo large as to be hollowed out into canoes and periaguas, for which purpoſe it is extremely well adapted, the wood being ſoft, it may be cut out with great facility, and being light, it will carry a great weight on the water. There are canoes in the Weſt Indies, which have been formed out of theſe trunks, forty feet long and ſix broad; the wood is of a brown colour, and has a fragrant odour, whence the title of Cedar has been given to it: it is frequently cut into ſhingles for covering houſes, and is found very durable; but as the worms are apt to eat this wood, it is not proper for building ſhips, though it is often uſed for that purpoſe, as alſo for ſheathing of ſhips. It is often uſed for wainſcoting of rooms, and to make cheſts, becauſe vermin do not ſo frequently breed in it, as in many other ſorts of wood, this having a very bitter taſte, which is communicated to whatever is put into the cheſts, eſpecially when the wood is freſh; for which reaſon it is

[a] Gærtner. [b] Browne. [c] Hort. kew.

never made into casks, because spirituous liquors will dissolve part of the resin, and thereby acquire a very bitter taste.

[Dampier mentions some of these trees in the island of St. Andreas near the isle of Providence, the bodies of which were forty or fifty, and many sixty or seventy feet long.

It was cultivated in 1739, by Mr. Philip Miller*.

Loureiro has another species, to which he has given the name of *Cedrela Rosmarinus*. It is a shrub, about four feet high, with linear leaves, and axillary one-flowered pedunicles: the seeds are not winged. It grows wild in Cochinchina and about Macao in China. It yields a fine essential oil, and a spirit not inferior to that which is drawn from Rosemary.]

PROPAGATION AND CULTURE.

It is propagated by seeds, which may be easily procured from the West Indies. They must be sown upon a hot-bed in the spring, and the plants treated in the same manner as the Mahogany. See *Swietenia*.

They are of much quicker growth, for in four years the plants will be upwards of ten feet high.

[CEDRELA. See *Swietenia*.

CEDRO. See *Cedrela*.

CEDRONELLA. See *Dracocephalum*.

CEDROTA.

*Lin. gen. Schreb. n.* 660. Aniba. *Aubl.* 329. *Juss.* 438.

Class. 8. 1. Octandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, six-parted: *parts* ovate, obtuse, concave.

COR. none.

STAM. *Filaments* eight, short. *Anthers* roundish.

PIST. *Germ* superior, roundish, surrounded by a gland. *Style* short. *Stigma* obtuse.

PER.

SEED

ESSENTIAL CHARACTER.

*Cal.* six-parted. *Cor.* none. *Germ* superior, surrounded by a gland. *Style* short.

SPECIES.

1. Cedrota guianensis.
*Linn. syst. ed. Gmel.* 629.
Aniba guianensis. *Aubl. guian.* 327. *t.* 126.

DESCRIPTION, *&c.*

This is a tree forty feet in height, and two feet in diameter, with a thick, unequal, wrinkled bark, full of clefts, and a yellow, heavy, aromatic wood, which however becomes light when dry. It has a great number of large branches at top, some straight, others inclined, and spreading every way. These are loaded with twigs, having leaves either opposite, or in whorls of three or five together: they are smooth, thin, entire, oblong, oval, acuminate, on a short petiole channelled above. Flowers very small, loosely racemed, on a long, weak, axillary pedunicle.

It grows in the great forests of Guiana, flowering in may. The inhabitants call it *Bois de Cedre*, and use it for making their *perogues*: they say that it is also fit for masts*.

CEDRUS. See *Cedrela*, *Cliffortia*, *Juniperus*, *Pinus*, *Scoltetia*.]

CEIBA. See *Bombax*.

CELADONITE. See *Chelidonium*.

CELASTRUS. (*Euonymus Catesbæi*. Walt. Carol. 122. Pursh.)

*Lin. gen.* n. 270. *Reich.* 390. *Schreb.* 372. *Juss.* 378. *Gærtn.* 1. 195. Euonymoides. *Ispard. A. G.* 1716.

Class. 5. 1. Pentandria Monogynia.

Nat. order of *Dumosæ*. *Rhamni* Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, half-five-cleft, flat, small; *segments* obtuse, unequal.

COR. *Petals* five, ovate, spreading, sessile, equal, reflected at the borders.

STAM. *Filaments* five, subulate, length of the corolla. *Anthers* very small.

PIST. *Germ* very small, immersed in a large flat receptacle, which is marked with ten streaks. *Style* subulate, shorter than the stamens. *Stigma* obtuse, trifid.

PER. *Capsule* coloured, ovate, obtusely triangular, gibbous, trilocular, trivalvular.

SEEDS few, ovate, coloured, smooth, half involved in an unequal coloured *Arillus* with a four-cleft mouth.

OBS. *There is a species without any style, and with a triple stigma, and consequently allied to the order* Trigynia *of this class.*

ESSENTIAL CHARACTER.

*Cor.* five-petalled, spreading. *Cap.* triangular, trilocular. *Seeds* calyptrated.

SPECIES.

1. Celastrus bullatus.
*Lin. spec.* 285. *Reich.* 552.
Euonymus. *Pluk. alm.* t. 28. *f.* 5.
*Unarmed, leaves ovate quite entire.*
2. Celastrus scandens. *Climbing Staff-tree.*
*Lin. spec.* 285. *Reich.* 552.
C. punctatus. *Thunb. jap.* 97.
Euonymoides. *Duham. arb.* 1. 223. *t.* 95. *Ips. Asiat.* 1716. *t.* 30.
*Unarmed, stem twining.*
[3. Celastrus myrtifolius. *Myrtle-leaved Staff-tree.*
*Lin. spec.* 285. *Reich.* 552. *hort. cliff.* 72.
*Unarmed, leaves ovate finely serrate, flowers racemed, stem erect.*
4. Celastrus procumbens. *Procumbent Staff-tree.*
*Lin. syst.* 237. *suppl.* 153.
*Unarmed, procumbent, leaves ovate serrate, flowers axillary subsolitary.*
5. Celastrus filiformis. *Filiform-branched Staff-tree.*
*Lin. syst.* 237. *suppl.* 153.
*Unarmed, leaves lanceolate entire, branches filiform, pedunicles axillary one-flowered.*
6. Celastrus acuminatus. *Acuminate-leaved Staff-tree.*
*Lin. syst.* 237. *suppl.* 154.
*Unarmed, leaves ovate acuminate serrate, pedunicles axillary one-flowered, stem erect lax.*
7. Celastrus microphyllus.
*Lin. syst.* 237. *suppl.* 154.
*Unarmed, leaves ovate obtuse entire, cymes terminal dichotomous.*
8. Celastrus articulatus.
*Lin. syst.* 237. *Thunb. jap.* 97.
*Unarmed, leaves rounded acuminate serrate, pedunicles axillary subtrifid.*
9. Celastrus dilatatus.
*Thunb. in transf. Linn. soc.* 2. 332.
Euonymoides baccis parvis. *Thunb. jap.* 354.
*Leaves obovate, cuspid, serrate at the tip and smooth, stem unarmed.*
10. Celastrus striatus.
*Lin. syst.* 237. *Thunb. jap.* 98.
*Unarmed, branchlets erect striated, leaves ovate acuminate serrate, pedunicles scattered one-flowered.*
11. Celastrus alatus. *Wing-branched Staff-tree.*
*Lin. syst.* 237. *Thunb. jap.* 98. *Kæmpf. amæn.* 5. 796.
*Unarmed, branches winged.*]
12. Celastrus buxifolius. *Box-leaved Staff-tree.*
*Lin. spec.* 285. *Reich.* 553. *hort. cliff.* 72.
Lycium. *Pluk. alm. t.* 202. *f.* 3.
*Spines leafy, branches angular, leaves obtuse.*
13. Celastrus pyracanthus. *Pyracantha-leaved Staff-tree.*
*Lin. spec.* 285. *Reich.* 553. *Gærtn. fruct.* 2. 85. *Mill. ic.* t. 87. *Pluk. alm. t.* 126. *f.* 2, 3.
Lycium. *Camo. hort.* 1. 163. *t.* 84. *Raii dendr.* 72. *n.* 28.
*Spines naked, branches round, leaves acute.*
[14. Celastrus lucidus. *Shining Staff-tree*, or *small Hottentot Cherry.*
*Lin. syst.* 237. *Reich.* 553. *mant.* 49. *L'Herit. st. nov. fasc.* 3. 49. *t.* 25.
Euonymus. *Pluk. alm.* 1. 289. *f.* 4.
*Leaves and branches quite entire.*

* Hort. Kew. * Aublet.

imbricate on the edge, ſoon falling off[s]. The fruits riſe four, five or more from the very top of a common peduncle, and ſhoot into ſo many oblong cylindric berries, compoſed of a row of little *acini*, ſomething like our Raſpberry, which they reſemble in flavour when ripe, and are agreeable to moſt European palates on that account.

The wood of this tree, when dry, is very apt to take fire by attrition. The native Indians have taken the hint, and always kindle their fires in the woods by rubbing a piece of it againſt ſome harder wood. [The bark is ſtrong and fibrous, and is frequently uſed for all ſorts of cordage. The trunk is very light, and for that reaſon much uſed for bark-logs and fiſhing-floats. The ſmaller branches, when cleared of the ſeptums, ſerve for wind inſtruments. Both trunk and branches yield a great quantity of fixed ſalt, which is much uſed among the French, to deſpumate and granulate their ſugars. The fruit is much fed upon by pigeons and other birds, and thus the tree is much ſpread and propagated[t].

Native of South America; Jamaica, and other Weſt India iſlands.]

Mr. Miller received ſpecimens of this tree from Dr. Houſtoun, who found it growing naturally at La Vera Cruz in New Spain. [It does not appear however that he ever cultivated it. In the catalogue of the royal botanic garden at Kew, it is ſaid to have been introduced in 1778, by Thomas Clark, M. D.]

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It may be propagated by ſeeds, procured from the places of natural growth. They ſhould be brought over in ſand, for if they are put up moiſt in papers, they will be apt to grow mouldy.

They ſhould be ſown in ſmall pots filled with light earth, and plunged into a moderate hot-bed of tanners-bark, obſerving to water the pots duly, and to admit freſh air whenever the weather is favourable. When the plants come up and are fit to tranſplant, they ſhould be carefully taken up, and each planted in a ſeparate ſmall pot filled with the like light earth, and plunged into the hot-bed again, being careful to water them to ſettle the earth to their roots, and alſo to ſcreen them from the ſun till they have taken new root: after which they ſhould be conſtantly kept plunged into the bark-bed in the ſtove, and treated in the ſame manner as other plants from the ſame country.

CEDAR, Barbadoes. See *Cedrela*.
——— Bermudas, } See *Juniperus*.
——— Carolina. }
——— Jamaica. See *Theobroma*.
——— Libanus or Lebanon. See *Pinus Cedrus*.
——— Lycian, }
——— Phœnician, } See *Juniperus*.
——— Virginian. }
——— White. See *Cupreſſus*.

[CEDRELA.
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Nat. order of *Miſcellaneæ*. *Meliæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* monophyllous, campanulate, very ſmall, five-toothed, withering.
COR. Funnel-form, pentapetalous, the *tube* bellied below. *Petals* linear-oblong, obtuſe, erect, adjoined to the receptacle at one-third beneath.
STAM. *Filaments* five, ſubulate, ſeated on the receptacle, ſhorter than the corolla. *Anthers* oblong, bent outwards at the tip.
PIST. *Receptacle proper* five-cornered. *Germ* globular. *Style* cylindric, length of the corolla. *Stigma* headed, depreſſed.
PER. *Capſule* ſuperior, woody, roundiſh, five-celled, five-valved; valves deciduous.

[s] Linn. amoen. & Loefling. [t] Browne.

SEEDS numerous, fleſhy, imbricate downwards, terminated by a membranaceous wing. *Receptacle* woody, five-angled, free.
OBS. *This genus may be compared with* Swietenia.

ESSENTIAL CHARACTER.

*Cal.* withering. *Cor.* five-petalled, funnel-form, faſtened by the baſe to the receptacle to one-third of its length. *Capſ.* woody, five-celled, five-valved. *Seeds* imbricate downwards, with a membranaceous wing.

SPECIES.

1. Cedrela odorata. *Barbadoes Baſtard Cedar.*
*Lin. ſpec.* 289. *Reich.* 562. *Loeſ. it.* 183. *Gærtn. fruct.* 2. 84. *Brown. jam.* 158. *t.* 10. *f.* 1.]
*Pluk. alm. t.* 157. *f.* 1.
Cedrus odorata. *Mill. dict. n.* 1.
[Pruno affinis arbor, &c. *Sloan. jam.* 2. 128. *n.* 19. *t.* 220. *f.* 2. *Raii dendr.* 43. *n.* 8.
*Flowers paniculed.*]

DESCRIPTION, *&c.*

This tree riſes with a ſtraight ſtem to the height of ſeventy or eighty feet, while young the bark is ſmooth, and of an Aſh-colour; but as it advances, the bark becomes rough and of a darker colour. Toward the top it ſhoots out many ſide branches, garniſhed with winged leaves, compoſed of ſixteen or eighteen pair of leaflets, ſo that they are ſometimes near three feet long; the leaflets are broad at their baſe, and are near two inches long, blunt at their ends, and of a pale colour; theſe emit a very rank odour in the ſummer ſeaſon, ſo as to be very offenſive. The fruit is oval, about the ſize of a partridge's egg, ſmooth, of a very dark colour, and opens in five parts, having a five-cornered column ſtanding in the middle, between the angles of which the winged ſeeds are cloſely placed, lapping over each other like the ſcales of fiſh.

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The trunk is covered with a rough bark, marked with longitudinal fiſſures. This, as well as the berries and leaves, has a ſmell like Aſſa-fœtida, when freſh. The timber however has a pleaſant ſmell[w].]

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never made into casks, because spirituous liquors will dissolve part of the resin, and thereby acquire a very bitter taste.

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It was cultivated in 1739, by Mr. Philip Miller*.

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It is propagated by seeds, which may be easily procured from the West Indies. They must be sown upon a hot-bed in the spring, and the plants treated in the same manner as the Mahogany. See *Swietenia*.

They are of much quicker growth, for in four years the plants will be upwards of ten feet high.

[CEDRELA. See *Swietenia*.

CEDRO. See *Cedrela*.

CEDROSTELA. See *Dracocephalum*.

CEDROTA.

*Lin. gen.* 860. *Schreb.* n. 660. Aniba. *Aubl.* 329. *Juss.* 418.

Class. 8. 1. Octandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, six-parted: *parts* ovate, obtuse, concave.

COR. none.

STAM. *Filaments* eight, short. *Anthers* roundish.

PIST. *Germ* superior, roundish, surrounded by a gland. *Style* short. *Stigma* obtuse.

PER.

SEED.

ESSENTIAL CHARACTER.

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DESCRIPTION, &c.

This is a tree forty feet in height, and two feet in diameter, with a thick, unequal, wrinkled bark, full of clefts, and a yellow, heavy, aromatic wood, which however becomes light when dry. It has a great number of large branches at top, some straight, others inclined, and spreading every way. These are loaded with twigs, having leaves either opposite, or in whorls of three or five together; they are smooth, thin, entire, oblong, oval, acuminate, on a short petiole channelled above. Flowers very small, loosely racemed, on a long, weak, axillary peduncle.

It grows in the great woods of Guiana, flowering in may. The inhabitants call it *Bois de Cedre*, and use it for making their perogues: they say that it is also fit for masts*.

CEDRUS. See *Cedrela*, *Cliffortia*, *Juniperus*, *Pinus*, *Swietenia*.]

CELBA. See *Bombax*.

CELESTINUS. See *Clethodiaenus*.

CELASTRUS. (*Theophrastus calls some wild evergreen trees* Kελαστρινα.)

*Lin. gen.* n. 270. *Reich.* 290. *Schreb.* 372. *Juss.* 378. *Gærtn.* 2. 95. Euonymoides. *Ispard. Ad. G.* 1746.

Class. 5. 1. Pentandria Monogynia.

Nat. order of *Dumosæ*. *Rhamni* Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, half-five-cleft, flat, small, *divisions* obtuse, unequal.

COR. *Petals* five, ovate, spreading, sessile, equal, reflected at the borders.

STAM. *Filaments* five, subulate, length of the corolla. *Anthers* very small.

PIST. *Germ* very small, immersed in a large flat receptacle, which is marked with ten streaks. *Style* subulate, shorter than the stamens. *Stigma* obtuse, trifid.

PER. *Capsule* coloured, ovate, obtusely triangular, gibbous, trilocular, trivalvular.

SEEDS few, ovate, coloured, smooth, half involved in an unequal coloured *aril* with a four-cleft mouth.

OBS. *There is a species without any style, and with a simple stigma, and consequently allied to the order* Trigynia *of this class.*

ESSENTIAL CHARACTER.

*Cor.* five-petalled, spreading. *Caps.* triangular, trilocular. *Seeds* calyptrated.

SPECIES.

1. Celastrus bullatus.
*Lin. spec.* 285. *Reich.* 552.
Euonymus. *Pluk. alm.* t. 28. f. 5.
*Unarmed, leaves ovate quite entire.*
2. Celastrus scandens. *Climbing Staff-tree.*
*Lin. spec.* 285. *Reich.* 552.
C. punctatus. *Thunb. jap.* 97.
Euonymoides. *Duham. arb.* 1. 223. *t.* 95. *Ips. act. gall.* 1716. *t.* 30.
*Unarmed, stem twining.*
[3. Celastrus myrtifolius. *Myrtle-leaved Staff-tree.*
*Lin. spec.* 285. *Reich.* 552. *hort. cliff.* 72.
*Unarmed, leaves ovate finely serrate, flowers racemed, stem erect.*
4. Celastrus procumbens. *Procumbent Staff-tree.*
*Lin. syst.* 237. *suppl.* 153.
*Unarmed, procumbent, leaves ovate serrate, flowers axillary subsolitary.*
5. Celastrus filiformis. *Filiform-branched Staff-tree.*
*Lin. syst.* 237. *suppl.* 153.
*Unarmed, leaves lanceolate entire, branches filiform, peduncles axillary one-flowered.*
6. Celastrus acuminatus. *Acuminate-leaved Staff-tree.*
*Lin. syst.* 237. *suppl.* 154.
*Unarmed, leaves ovate acuminate serrate, peduncles axillary one-flowered, stem erect too.*
7. Celastrus microphyllus.
*Lin. syst.* 237. *suppl.* 154.
*Unarmed, leaves ovate obtuse entire, cymes terminal dichotomous.*
8. Celastrus articulatus.
*Lin. syst.* 237. *Thunb. jap.* 97.
*Unarmed, leaves rounded acuminate serrate, peduncles axillary subtrifid.*
9. Celastrus dilatatus.
*Thunb. in transf. Linn. soc.* 2. 332.
Euonymoides baccis parvis. *Thunb. jap.* 354.
*Leaves obovate, cuspid, serrate at the tip and smooth, stem unarmed.*
10. Celastrus striatus.
*Lin. syst.* 237. *Thunb. jap.* 98.
*Unarmed, branchlets erect striated, leaves ovate acuminate serrate, peduncles scattered one-flowered.*
11. Celastrus alatus. *Wing-branched Staff-tree.*
*Lin. syst.* 237. *Thunb. jap.* 98. *Kæmpf. amen.* 5. 796.
*Unarmed, branches winged.*]
12. Celastrus buxifolius. *Box-leaved Staff-tree.*
*Lin. spec.* 285. *Reich.* 553. *hort. cliff.* 72.
Lycium. *Pluk. alm.* t. 202. *f.* 3.
*Spines leafy, branches angular, leaves obtuse.*
13. Celastrus pyracanthus. *Pyracantha-leaved Staff-tree.*
*Lin. spec.* 285. *Reich.* 553. *Gærtn. fruct.* 2. 85. *Mill. fig.* t. 87. *Plut. alm.* t. 126. *f.* 2, 3.
Lycium. *Comm. hort.* 1. 163. *t.* 84. *Raii dendr.* 72. *n.* 28.
*Spines naked, branches round, leaves acute.*
[14. Celastrus lucidus. *Shining Staff-tree*, or *small Hottentot Cherry.*
*Lin. syst.* 237. *Reich.* 553. *mant.* 29. *L'Herit. n. sert. fasc.* 3. 29. *t.* 25.
Euonymus. *Pluk. alm.* t. 280. *f.* 4.
*Leaves oval shining quite entire margined.*

* Hort. Kew. * Aublet.

15. Celastrus linearis. *Linear-leaved Staff-tree.*
*Lin. syst.* 237. *suppl.* 153.
*Spines leafy, leaves linear entire.*

16. Celastrus integrifolius. *Entire-leaved Staff-tree.*
*Lin. syst.* 237. *suppl.* 153.
*Spines leafy, leaves ovate obtuse quite entire, cymes lateral.*

17. Celastrus crenatus. *Notch-leaved Staff-tree.*
*Forsk. prodr. arabs. n.* 113.
*Unarmed; leaves ovate, crenulate; cymes axillary.*

18. Celastrus corniculatus.
*L'Herit. sert. angl.* 6. *n.* 1.
Euonymus. *Breyn. ic.* 1. 22. *f.* 3. *Burm. afr. t.* 97. *f.* 1.
*Leaves oval quite entire perennial, capsule three-horned.*

19. Celastrus Cassinoides. *Crenated Staff-tree.*
*L'Herit. sert. angl.* 6. *n.* 2. *t.* 10. *Ait. hort. kew.* 271.
*Unarmed; leaves ovate, acute both ways, loosely toothed, perennial; flowers axillary.*

20. Celastrus phyllacanthus.
*L'Herit. sert. angl.* 6. *n.* 3.
*Thorns leafy, leaves lanceolate, serrate perennial, flowers lateral.*

21. Celastrus octogonus. *Angular-leaved Staff-tree.*
*L'Herit. sert. angl.* 7. *n.* 4. *Ait. hort. kew.* 272.
*Unarmed; leaves elliptic angular almost nerveless perennial, capsules bivalve, one-seeded.*

22. Celastrus undulatus. *Waved-leaved Staff-tree.*
*L'Herit. sert. angl.* 7. *n.* 5. *Ait. hort. kew.* 272.
*Unarmed; leaves nearly opposite lanceolate waved, capsules bivalve many-seeded.*

DESCRIPTIONS, *&c.*

This genus consists of shrubs or small trees, with alternate leaves, and the flowers many together, on axillary subdichotomous peduncles. It is so nearly allied to *Euonymus*, that some would unite it to that genus.]

1. It rises to the height of eight or ten feet; but in England there are few of these shrubs much more than half that height. It generally puts out two or three stems from the root, which divide upward into several branches, covered with a brown bark, garnished with leaves near three inches long, and two broad, placed alternately on the branches; the flowers come out in loose spikes at the end of the branches, and are white; the capsule is of a scarlet colour, set full of small protuberances; it opens into three cells, each containing a hard oval seed, covered with a thin red pulp. This shrub flowers in july, but rarely produces good seeds in England.

It grows naturally in Virginia, and many other parts of North America.

2. The second sort sends out several woody stalks, which are flexible, and twist themselves round trees and shrubs, or round each other, to the height of twelve and fourteen feet or more; girding trees so closely as in a few years to destroy them. The leaves are about three inches long, and near two broad, serrate, alternate, of a lively green above, but paler on their under side, having several transverse nerves. The flowers are produced in small bunches towards the ends of the branches; they are of an herbaceous colour, and are succeeded by roundish three-cornered capsules, which are red when ripe, and spread open their three cells, discloſing their seeds in the same manner as our common Spindle-tree. It flowers in the beginning of june, and the seeds ripen in autumn.

[Thunberg, who had made a new species of this under the name of *C. punctatus*, but afterwards corrected his error, adds; that the branches are elongated, polygonous, rough with white dots, ferruginous and naked: branchlets scattered, striated, spreading much, often recurved, leafy and short. Leaves acute, smooth, an inch long, on very short petioles. Flowers scattered, solitary, on very short, loose, jointed peduncles. The seeds are covered with a yellow wrinkled aril.

Native of North America and Japan.

It was introduced in 1736, by Peter Collinson, Esq.*.

3. Native of North America. The synonyms of Sloane and Ray belong to a new species of *Prunus*, which Swartz has named *P. sphærocarpa*. Miller's *Celastrus myrtifolius* is the same plant.

4. 5. 6. 7. Found at the Cape of Good Hope, by Thunberg*.

8. Stem shrubby erect. Branches polygonous, ferruginous, smooth, dotted with white. Leaves smooth, nerved, spreading, an inch and half in length. Petioles channelled, one-third of the length of the leaves. Peduncles bifid and trifid.

9. This is a shrub or small tree, upright, with round smooth branches. Leaves blunted at the end, but having a point, narrowed below, entire, paler underneath, unequal, from one inch to three in length, on petioles scarcely half a line long. The fruits are berries terminating the peduncles, sessile, aggregate, minute, blue.

10. Stem shrubby; branches round, somewhat wrinkled, ash-coloured, erect. Leaves oppolite, on very short petioles, smooth, spreading, an inch long. Peduncles capillary, jointed, spreading much. Capsules one-celled, two, three or four-celled; or rather the capsules are aggregate. It differs from the second species in having the branches neither dotted nor climbing, and the leaves subsessile.

11. Stem shrubby, a fathom in height: branches oppolite loose upright smooth: branchlets also oppolite, much spreading, short, winged as well as the branches: the wings somewhat ovate, irregularly scattered here and there, adhering to the bark, but easily separating. Leaves oppolite, on very short petioles, elliptic, acuminate, very finely serrate, smooth, spreading, an inch long. Flowers scattered, on capillary, one-flowered peduncles, an inch long, having two glands above the middle. Capsules one or two-celled, seldom three-celled. Seeds arilled.

It is difficult to determine whether this be a *Celastrus* or *Euonymus*, the two genera being so nearly allied as that perhaps they ought not to be separated: but it seems rather to be a Celastrus, by its having usually a one-celled capsule.

*This and the three foregoing species were first observed by Thunberg in Japan.*

The last is a handsome shrub, singular for its winged branches. It is frequently cultivated by the Japonese in their gardens: and the young men hang bunches of the flowers before the doors of the house, to signify their desire to pay addresses to a young woman within*.]

12. This rises with a slender woody stalk to the height of ten or twelve feet, covered with a light ash-coloured bark, and full of joints, armed with long spines, upon which grow many small leaves; the branches are slender, armed also with spines at every joint; but the whole plant is so weak as to require some support. The leaves come out in clusters without any order; are shaped somewhat like those of the narrow-leaved Box-tree, but longer and of a loose texture. [They are obovate and acutely serrate. Both branches and branchlets are angular. The flowers are on pedunculed cymes from the axils. The fruit is globular. In the next species it is triquetrous*.]

It is a native of the Cape of Good Hope; was cultivated by Mr. Miller in 1759; and flowers in may and june*.]

13. This rises with an irregular stalk three or four feet high, sending out several side branches, covered with brown bark. Leaves about two inches long, and more than half an inch broad, some pointed and others obtuse; they are stiff, of a lucid green, come out irregularly from the branches, and continue green through the year. The flowers are produced from the sides of the branches in loose

* Hort. kew.
* Linn. suppl.
* Thunb. jap.
* Linn. spec. & chil.
* Hort. kew.

tufts,

tufts, many from one point, on long peduncles, and of an herbaceous white colour. The fruit is of a fine red colour, and opens into three cells, containing one oblong hard seed; two of the cells being generally empty.

[The branches and branchlets are roundish: the leaves are oval-lanceolate, sharp to both ends, terminating in the petioles, in the upper part having acuminate serratures which are almost spiny. Cymes peduncled, lateral [a]. Capsule superior, obovate, acuminate at the tip, three-sided, three-furrowed, reddish-ferruginous on the outside, pale straw-colour within, three-celled, opening into three parts at the top, but entire at the base: partitions answering to the middle of the valvular grooves. Seeds few, about four in each cell, but scarcely two ripening: they are ovate, attenuated towards the navel, brown, and covered with a membranaceous, soft, scarlet aril, pervious on the side opposite to the navel, with a four-cleft, unequal mouth [b].]

It is a native of the Cape of Good Hope, whence the seeds were first brought to the gardens in Holland, and thence communicated to most of the curious gardens in Europe.

[It was cultivated in 1752, by Mr. Miller, and flowers most part of the summer [c].

14. An upright shrub, with brown hard branches. Leaves ovate or obovate, somewhat obtuse, veined, on very short petioles, the edge quite entire and turned back. Peduncles axillary, crowded, simple, shorter than the leaves. Petals concave. Stamens shorter than the corolla. Style thick, with three diverging stigmas [d].

It differs from *C. pyracanthus* in having rounder leaves, which are concave, and as it were boat-shaped; and in the branches being without spines [e]. Native of the Cape of Good Hope. Introduced in 1722, by James Sherard, M.D. It flowers from april to september [f].

15, 16. Found at the Cape of Good Hope by Thunberg [g].

17. Native of the Marquesas islands in the South seas [h].

18. It has the appearance of *Euclea*, and is a native of the Cape of Good Hope [i].

19. A native of the Canary islands. Mr. Francis Masson introduced it in 1779. It flowers in august and september [k].

20. Found in Senegal by Adanson. It has flowered in the Paris garden, but has not borne fruit.

21. Leaves glaucous. Flowers perhaps polygamous, the hermaphrodites or females very rare. Seed arilled, two-furrowed. Found in Peru by Dombey. There are other species from Peru and Chili, which have a bivalve capsule [l].

Introduced in 1786 by Mons. Thouin. It flowers in october [m].

22. Leaves acuminate, sometimes having one nerve, the edge whitish and revolute. Petals spatulate. Stigma obscurely capitate: capsule one-celled, two-valved. Seeds eight to twelve, naked, not arilled. Thus it recedes from the genus in its pericarp and seeds, but not sufficiently to constitute a new genus. Commerson found it in the isle of Bourbon, where they call it *Bois de folli cuve*, and use it as an *antisiphylitic* [n].

Introduced in 1785 by Messrs. Lee and Kennedy [o].]

PROPAGATION AND CULTURE.

1. It is propagated here by layers, which will take root in one year; the young branches only are proper for this purpose, so that where there are not any of these near the ground, the main stalks should be drawn down, and fastened with pegs to prevent their rising, and the young shoots from them should be laid. The best time for doing this is in autumn, when they begin to cast their leaves, and by that time twelvemonth they will be sufficiently rooted, when they should be cut off from the old plant, and planted in a nursery for two or three years to get strength; after which they must be removed to the places where they are to remain. This shrub grows naturally in moist places, and will not thrive well in a dry soil. It is very hardy, and bears the cold of our winters very well. It is also propagated by seeds, which are frequently brought from America; but as these rarely arrive here time enough to sow before the spring, the plants never come up the first year; therefore the seeds may be sown either in pots, or in a bed of loamy earth, keeping them clean from weeds during the summer; and those in the pots should be placed in the shade till the autumn, when the pots should be either plunged into the ground in a warm situation, or placed under a common frame, to prevent the frost from penetrating through the side of the pots, and if the surface of those which are plunged into the ground, and also the bed where the seeds are sown are lightly covered with some old tan from a decayed hot-bed, it will secure the seeds from being hurt by severe frosts. In the spring, when the plants come up, they must be kept clear from weeds; and if the season proves dry, they should have water now and then, which will greatly forward their growth. If the plants make good progress the first summer, they may be transplanted into a nursery in autumn; otherwise they should remain in the seed-bed till the second year, when they may be treated in the same manner as the layers.

2. The seeds of the second sort generally ripen well in England, and this may be propagated from these or by layers, as the former. It delights in a strong loamy soil, rather moist than dry, and will grow in woods among other trees and shrubs; where, when the fruit is ripe, it makes a pretty appearance. It is extremely hardy.

4, 5, 6, 7, 12, 13, 14, 15, 16, 18. The Cape sorts may be propagated by cuttings; which is more expeditious than raising them from seeds, because these rarely come up the same year. The cuttings may be planted any part of the summer; but those which are planted early, will have more time to get strength before winter. Put them in small pots filled with good kitchen garden earth, four together; plunge them into a moderate hot-bed, shade them from the sun, and gently refresh them with water now and then. When they have taken root, expose them gradually to the open air, and then place them in a sheltered situation till they have obtained strength. Plant each in a small pot filled with the same earth; place them in the shade till they have taken fresh root; set them with other exotic plants in a sheltered situation till autumn; then house them with other hardy green-house plants.

12. Rises easily from seeds, and will be four feet high in two years, without artificial heat. In mild winters this will live under a south wall, but it sheds the leaves there.

If the young shoots are laid, they will take root in one year, and may then be transplanted either into pots, or against a warm wall, where if they be covered in severe frosts, they may be brought, when old, to live abroad without protection. Those in pots will require a little shelter in winter, but should not be tenderly treated, for that will cause them to have weak branches, nor will the leaves have so much verdure, as when they are exposed to the open air in mild weather.

21, 22. Are more tender, and must be kept in the stove.

CELASTRUS. See *Cassine*, *Celastrus*, *Euonymus*.

CELERY or Celery. See *Apium*.

CELOSIA.

*Linn. gen. n.* 289. *Reich.* 312. *Schreb.* 405. *Juss.* 88. *Gærtn. t.* 128. *Stachyarpagophora. Vaill. A. C.* 1722.

Class. 5. 1. Pentandria Monogynia.

Nat. order of *Miscellaneæ*. *Amaranthi* Juss.



[a] Linn. fpec.
[b] Gærtner.
[c] Hort. kew.
[d] Linn. mant.
[e] L'Heritier.
[f] Hort. kew.
[g] Linn. fuppl.
[h] Forfter.
[i] L'Heritier.
[k] Hort. kew.
[l] L'Heritier.
[m] Hort. kew.
[n] L'Heritier.
[o] Hort. kew.

[Retzius says, that a plant sent him under the name of *Celosia maritandica* is certainly the same with this, answering to the Linnean character except that the leaves are rather lanceolate than ovate. The calyx is shorter than the corolla: the stamens truly monadelphous: a minute nectary surrounds the pedicel of the germ pressed back beneath: and the bell-shaped filament with a five-toothed tip: and the stigma is slightly bifid.

*Celosia margaritacea* sent from Tranquebar by Koenig differs from this, in having the calyx longer than the corolla, and ending in long awn-shaped tips: the leaves are narrow and lanceolate: the petals linear-lanceolate: the stamens slightly connected at the base. The fabric of the stamens in *C. argentea* is the same as in the *maritandica*.]

3. This is well known by its common appellation of Cock's-comb, which was given it from the form of its crested head of flowers, resembling the comb of a cock. There are many varieties, differing in form, magnitude and colour, from the same seed. I have raised great varieties from seeds which came from China, and other countries, but have generally found them alter in a few years, notwithstanding great care has been taken in saving the seeds: the principal colours of their heads are red, purple, yellow, and white; but I have had some, whose heads have been variegated with two or three colours. I also raised some from seeds which I received from Persia, whose heads were divided like a plume of feathers, and were of a beautiful scarlet colour, but these in a few years degenerated. [Linneus remarks, that it varies with narrow and broad leaves. It is a native of Asia. Thunberg informs us, that the crests or heads of flowers are frequently a foot in length and breadth in Japan, and extremely beautiful, but that they degenerate in other countries.

It was cultivated here in 1570[a].

4. Stem suffruticose, prostrate, round, subdivided, striated: branches diverging. Leaves acuminate, petioled, entire, smooth. Spikes racemed, axillary and terminating, short. Flowers distinct, whitish. The calyx consists of five ovate, acute leaflets, whitish within. Corolla none, but a cup-shaped, five-cornered nectary, surrounding the germ: to the edge of this the filaments are fixed. The anthers are versatile and purple. Germ ovate: style subulate, simple, red: stigma trifid. Capsule covered by the permanent calyx, with numerous, shining seeds[b].

Mr. Miller says, that the stems are near four feet in length: and that the slender spikes are of a pale yellow, shining with a gloss like silk: that it grows naturally in most of the sugar islands, and that the seeds were sent him from Jamaica by Dr. Houstoun.

5. This has a furrowed stalk, rising three or four feet high, and terminated by several spikes of flowers variously formed, some being crested, others plumed like feathers, of a bright scarlet colour, and making a good appearance. The seeds even when carefully saved are apt to degenerate.

[According to Linneus, it differs from the third sort, in having leaves three times as thick and brittle; the flowers wholly purple, not red with a purple keel; and the stamens shorter instead of longer than the corolla.]

It is a native of China, whence Mr. Miller says that he received the seeds: [but it was cultivated long before by Gerarde in 1597[c].]

6. This is of humbler growth. The branches proceed from the axils of the leaves almost the length of the stalk, and are terminated by slender spikes of flowers of no great beauty: the plant therefore is only preserved in botanic gardens.

[The stem, according to Loureiro, is a foot and half in height, red, striated and thick; with simple, rising branches. Leaves quite entire, smooth, scattered, marked underneath with red lines running obliquely, on short petioles: Linneus adds, that they often grow by threes. Flowers blood-red, in terminating spikes which are crested and large, and in axillary ones which are oblong and small. The capsules have many flatted, black, shining seeds.

Native of the East-Indies. Cultivated generally in China and Cochin-china; here by Mr. Miller in 1739[d].

7. Stem upright, simple, slightly angular, striated, stiff, a foot and half high. Leaves petioled, even, acute. Stipules in pairs, crescent-shaped, horizontal, clasping. Raceme terminating, composed of a few crowded white flowers, on short pedicels. Bractes scariose, silvery, ovate, distant. Calyx two-leaved, similar to the petals. Corolla ovate, acute, scariose, white, permanent. Filaments purplish, shorter than the petals. Style very short, with three purple stigmas longer than the style. Seeds three, subglobular[e].

Native of Senegal. Introduced in 1777, by Monf. Thouin[f].]

8. This rises with a white woolly stalk from two to three feet high. From the upper part come out two or three slender side branches; which, as also the principal stalk, are terminated by woolly spikes of flowers; the corollas are so closely wrapped up in their woolly calyxes as to be scarce visible to the naked eye; so that they make no great appearance: the extreme whiteness however of the stalk leaves and spikes, makes a pretty variety. It is a native of the island of Ceylon.

[Linneus remarks, that it has the appearance of *Halimus*: and Retzius doubts whether it be distinct from *Illecebrum javanicum*. (5. 3.)

9. This is very similar in its white woolly surface to the woolly *Celosias* and *Illecebrums*; from which however it differs in having the leaves opposite, and a solitary globular peduncled terminating head.

It was found in Brasil, on mount Video, by Thouin[g].

10. Stems angular, grooved, even. Leaves like those of Purslane, obovate, obtuse with a point, quite entire, smooth, subpetioled. Spikes solitary, peduncled; peduncle commonly shorter than the leaf[h]. Instead of the calyx there are from one to three linear bractes. Stamens fixed to the nectary at the base. Stigma twin-capitate. Seed single, lens-shaped. It varies, 1. with oblong leaves and peduncled heads: 2. with short roundish leaves ending in a point, and sessile heads: the first from Sumatra, and the second from Malabar[i].

It was introduced here in 1780; and flowers in july and august[k].

11. Stems two feet high, prostrate, round, little branched, geniculated, silky with appressed hairs, glaucous, ending in a subpanicled spike, on a long peduncle and leafless. Root-leaves and lower stem-leaves oblong, narrowing gradually at the base into the petiole, quite entire, four or five inches long, dotted on both sides, silky on the reverse and at the edges, thickish, and roughish to the touch. Stem-leaves opposite, smaller, remote: the upper subsessile and subovate. Spikelets oblong, compact, the side ones sessile. The proper peduncles visible only with a glass, and defended with a woolly fascicle. Native of S. Domingo[l]. Introduced 1784, by Monf. Thouin[m].

12. Stems prostrate, branching, ending in more elongated branches, a span long, and hoary. Lower leaves crowded almost into a tuft; the rest in whorls and subulate. Spikes opposite and terminating, somewhat oblong, whitish and reddish, very beautiful[n].

According to Retzius, the root is somewhat branched and woody. The stem divaricate and tomentose, with brachiate branches. Leaves like those of *C. corymbosa* and naked. Stipules, if any, very like the leaves. Spikes numerous, solitary, peduncled seldom sessile, the thickness of a crow quill;

[a] Hort. kew. [b] Sweert. [c] Hort. kew. [d] Linn. mant. [e] Hort. kew. [f] Linn. suppl. [g] Linn. syst. [h] Retz. [i] Hort. kew. [k] Jacq. misc. [l] Hort. kew. [m] Linn. suppl.

GENERIC CHARACTER.

CAL. *Perianth* three-leaved: *leaflets* lanceolate, dry, acute, permanent, similar to the corolla.

COR. *Petals* five, lanceolate, acuminate, erect, permanent, stiffish, calyciform.
*Nectary* a margin surrounding the germ, very small, five-cleft.

STAM. *Filaments* five, subulate, conjoined at the base to the plaited nectary, length of the corolla. *Anthers* versatile.

PIST. *Germ* globular. *Style* subulate, straight, length of the stamens. *Stigma* simple.

PER. *Capsule* globular, surrounded by the corolla, one-celled, circumcised.

SEEDS few, roundish, emarginate.

OBS. C. trigyna *is furnished with three stigmas.*

ESSENTIAL CHARACTER.

*Cal.* three-leaved, leaflets similar to those of the five-petalled corolla. *Stam.* conjoined at the base to the plaited nectary. *Caps.* gaping horizontally.

SPECIES.

[1. Celosia argentea. *Silvery-spiked Celosia.*
*Lin. spec.* 296. *fil.* 246. *Reich.* 577. *hort. cliff.* 43. 1. *Lour. cochinch.* 163.
Amaranthus. *Rheed. mal.* 10. 77. *t.* 39.
*Leaves lanceolate, stipules subfalcated, pedunculs angular, spikes fearsiose.*]

2. Celosia margaritacea.
*Lin. spec.* 297. *Reich.* 577. *Lour. cochinch.* 164. *Retz. obs.* 3. 27. *n.* 39. 40.
Amaranthus. *Bauh. pin.* 121. 4. *Mart. rust.* 1. 7. *Rheed. mal.* 10. 75. *t.* 38.
*Leaves ovate, stipules falcated, pedunculs angular, spikes fearsiose.*

3. Celosia cristata. *Crested Amaranth*, or *Cock's-comb.*
*Lin. spec.* 297. *fil.* 247. *Reich.* 577. *hort. cliff.* 43. 2. *upf.* 52. *Thunb. jap.* 106. *Gærtn. fruct.* 2. 215.
Amaranthus paniculo conglomerato. *Bauh. pin.* 221. *Ger. herb.* 254. *emac.* 322. *Park. parad.* 371. 1. *Raii hist.* 202. 1.
β. A major paniculis furreclis flavescentibus. *Herm. lugdb.* 30.
*Buff-coloured Celosia or Cock's-comb.*
*Leaves oblong-ovate, pedunculs round subfoliated, spikes oblong.*

4. Celosia paniculata. *Panicled Celosia.*
*Lin. spec.* 298. *Reich.* 578. *Swartz. obs.* 100. *Browne. jam.* 179. *Sloan. jam.* 1. *t.* 91. *f.* 1.
*Leaves ovate-oblong, stem rising panicled, spikes alternate terminal remote.*

5. Celosia coccinea. *Scarlet Celosia, or Chinese Cock's-comb.*
*Lin. spec.* 297. *Reich.* 578.
Amaranthus. *Bauh. pin.* 121. 2. *Bauh. hist.* 2. 969. fig. *Ger. herb.* 254. *f.* 2. *emac.* 322. 2. *Park. parad.* 371. 2. *t.* 373. *f.* 4. *Rai hist.* 202. 4.
*Leaves ovate stiff carlefs, stem grooved, spikes manifold erected.*

6. Celosia cristensis. *Disturbed Celosia*, or *Cock's-comb.*
*Lin. spec.* 297. *Reich.* 578. *Lour. cochinch.* 163.
Amaranthus. *Cam. epit.* 792. *Bart. par.* 1. 1195. *Boec. mus.* 2. *t.* 66. *Rumph. amb.* 5. 236. *t.* 84. *Besl. eyst. aut.* 2. *t.* 8. *f.* 1.
*Leaves lanceolate-ovate, marked with lines, very much acuminated, stipules falcated, spikes crested.*

[7. Celosia trigyna. *Oval-fruited Celosia.*
*Lin. fyl.* 247. *Reich.* 579. *mant.* 212. *Jacq. hort.* 3. *t.* 15.
*Leaves ovate-oblong, racemes lax, pistil trifid.*]

8. Celosia lanata. *Woolly Celosia.*
*Lin. spec.* 298. *Reich.* 579. *fl. zeyl. n.* 100. *Jacq. hort.* 3. *t.* 85.
*Leaves lanceolate tomentose obtuse, spikes crested, flowers woolly.*

[9. Celosia Gnaphaloides.
*Lin. fyl.* 247. *suppl.* 161.
*Shrubby, woolly; leaves opposite ovate white beneath; head globular pedunculed.*

10. Celosia nodiflora. *Knotted Celosia.*
*Lin. spec.* 298. *fil.* 247. *Reich.* 579. *fl. zeyl. n.* 101. *Retz. obs.* 4. 24. *n.* 70.

Amaranthoides. *Burm. zeyl.* 16. *t.* 5. *f.* 2. *Pluk. alm. t.* 133. *f.* 2.
*Leaves wedge-form somewhat acute, spikes globular lateral.*

11. Celosia procumbens. *Procumbent Celosia.*
*Lin. fyl.* 247. *Murr. in nova. com.* 1782. *p.* 16. *t.* 5. *Jacqu. misc.* 2. 324. *Icon. rar. Amer. hort. Vind.* 289.
Gomphrena interrupta. *L'Herit. stirp. nov.* 5. 2. 3. *Swartz. obs.* 108.
*Stems decumbent, pedunculs very long scaleless, spikes ovate approximating, capsules compressed crested-winged.*

12. Celosia Monsonia. *Duncy Celosia.*
*Act. hort. berol.* 288. *Retz. obs.* 2. 13. *n.* 26.

Illecebrum Monsoniæ. *Lin. fuppl.* 161.
Amaranthoides. *Plum. nov. t.* 334. *f.* 2.
*Spikes compact cylindric, branches beneath, flowers subulate.*

13. Celosia polygonoides.
*Retz. obs.* 2. 12. *n.* 25.
*Leaves cordate, stem hispid, racemi spiked hispid, flowers three-styled.*

14. Celosia baccata.
*Retz. obs.* 5. 33. *n.* 55.
*Flowers three-styled, fruits berried.*

DISSERTATION, &c.

Celosias or Cock's-combs, are all herbaceous plants, and annual. The flowers are glomerate in spikes or panicles, some of which are flatted and shaped somewhat like the comb of a cock.

1. Stem more upright than in *cristata*. The leaves approaching by no means to an ovate form, as in that. Spike terminating, ovate, close, erect, penninate, the thickness of the human thumb, the florets all feffile, never branching, the colour white, rarely approaching to red. Sometimes a little spike or two from the axils of the upper leaves.*

Native of the East-Indies, China, Cochinchina and Japan.

Introduced in 1714, by the Dutchess of Beaufort. It flowers from june to september*.

2. This, fays Linnæus, bears fo much fimilitude to the foregoing fort, as to be almoft a variety. There can indeed be little doubt of its being quite fo.—The leaves are rather ovate, and the florets are purple.

Loureiro keeps them diftinct, and gives the diftinctions. The ftem of the *margaritacea* [illegible] rofe and two feet high. Leaves oblong-[illegible] remand. Flowers in oblong, fubcylindric, [illegible] fulvous fpikes. The ftem of the *argentea* [illegible] lar, with ftraight afcending branches [illegible] lanceolate, quite entire, tomentofe underneath. [illegible] in oblong-conic, white and red fpikes.

Mr. Miller defcribes his *margaritacea* [illegible] with an upright ftalk about two feet high [illegible] with oval leaves ending in points, [illegible] thofe on the lower part fmall [illegible] long, and one and a half broad in the [illegible] they diminifh gradually in their fize [illegible] the upper part of the ftalk, there are [illegible] branches fent out which ftand erect [illegible] by a ſlender ſpike of flowers, and the [illegible] is terminated by one which is [illegible] two or three inches long, and about [illegible] man's middle finger, the whole [illegible] filvery colour. But there is a variety [illegible] ſlender pyramidal ſpikes, intermixed [illegible] toward the top, the leaves of which [illegible] Linnæus, by the above rule, but I am [illegible] think it is different from that which [illegible] by Martyn to his Decades of rare plants. I have cultivated many years in the Chelſea [illegible] without its varying. The ſpike of the [illegible] thicker than that of Linnæus's, and of [illegible] the whole length; whereas his diminiſhes [illegible] a point at the top, and the colours of both [illegible] different. He ſays that it grows naturally in [illegible] rica; and that he has frequently [illegible] from thence.

* Linn. fyſt. * Hort. [illegible]

[Retzius says, that a plant sent him under the name of *Celosia marilandica* is certainly the same with this, answering to the Linnean character except that the leaves are rather lanceolate than ovate. The calyx is shorter than the corolla: the stamens truly monadelphous: a minute nectary surrounds the pedicel of the germ pressed back beneath and the bell-shaped filament with a five-toothed tips and the stigma is slightly bifid.

*Celosia margaritacea* sent from Tranquebar by Koenig differs from this, in having the calyx longer than the corolla, and ending in long awn-shaped tips: the leaves are narrow and lanceolate: the petals linear-lanceolate: the stamens slightly connected at the base. The fabric of the stamens in *C. argentea* is the same as in the *marilandica*.]

3. This is well known by its common appellation of Cock's-comb, which was given it from the form of its crested head of flowers, resembling the comb of a cock. There are many varieties, differing in form, magnitude and colour, from the same seed. I have raised great varieties from seeds which came from China, and other countries, but have generally found them alter in a few years, notwithstanding great care has been taken in saving the seeds: the principal colours of their heads are red, purple, yellow, and white; but I have had some, whose heads have been variegated with two or three colours. I also raised some from seeds which I received from Persia, whose heads were divided like a plume of feathers, and were of a beautiful scarlet colour, but these in a few years degenerated. [Linnæus remarks, that it varies with narrow and broad leaves. It is a native of Asia. Thunberg informs us, that the crests or heads of flowers are frequently a foot in length and breadth in Japan, and extremely beautiful, but that they degenerate in other countries.

It was cultivated here in 1570[a].

4. Stem suffruticose, prostrate, round, subdivided, striated: branches diverging. Leaves acuminate, petioled, entire, smooth. Spikes racemed, axillary and terminating, short. Flowers distinct, whitish. The calyx consists of five ovate, acute leaflets, whitish within. Corolla none, but a cup-shaped, five-cornered nectary, surrounding the germ: to the edge of this the filaments are fixed. The anthers are versatile and purple. Germ ovate: style subulate, simple, red: stigma trifid. Capsule covered by the permanent calyx, with numerous, shining seeds[b].]

Mr. Miller says, that the stems are near four feet in length: and that the slender spikes are of a pale yellow, shining with a gloss like silk: that it grows naturally in most of the sugar islands, and that the seeds were sent him from Jamaica by Dr. Houstoun.

5. This has a furrowed stalk, rising three or four feet high, and terminated by several spikes of flowers variously formed, some being crested, others plumed like feathers, of a bright scarlet colour, and making a good appearance. The seeds even when carefully saved are apt to degenerate.

[According to Linnæus, it differs from the third sort, in having leaves three times as thick and brittle; the flowers wholly purple, not red with a purple keel; and the stamens shorter instead of longer than the corolla.]

It is a native of China, whence Mr. Miller says that he received the seeds: [but it was cultivated long before by Gerarde in 1597[c].]

6. This is of humbler growth. The branches proceed from the axils of the leaves almost the length of the stalk, and are terminated by slender spikes of flowers of no great beauty; the plant therefore is only preserved in botanic gardens.

[The stem, according to Loureiro, is a foot and half in height, red, striated and thick; with simple, rising branches. Leaves quite entire, smooth, scattered, marked underneath with red lines running obliquely, on short petioles. Linnæus adds, that they often grow by threes. Flowers blood-red, in terminating spikes which are crested and large, and in axillary ones which are oblong and small. The capsules have many flatted, black, shining seeds.

Native of the East-Indies. Cultivated generally in China and Cochin-china; here by Mr. Miller in 1739[d].

7. Stem upright, simple, slightly angular, striated, stiff, a foot and half high. Leaves petioled, even, acute. Stipules in pairs, crescent-shaped, horizontal, clasping. Raceme terminating, composed of a few crowded white flowers, on short pedicels. Bractes scarious, silvery, ovate, distant. Calyx two-leaved, similar to the petals. Corolla ovate, acute, scarious, white, permanent. Filaments purplish, shorter than the petals. Style very short, with three purple stigmas longer than the style. Seeds three, subglobular[e].

Native of Senegal. Introduced in 1777, by Monf. Thouin[f].]

8. This rises with a white woolly stalk from two to three feet high. From the upper part come out two or three slender side branches; which, as also the principal stalk, are terminated by woolly spikes of flowers; the corollas are so closely wrapped up in their woolly calyxes as to be scarce visible to the naked eye; so that they make no great appearance: the extreme whiteness however of the stalk, leaves and spikes, makes a pretty variety. It is a native of the island of Ceylon.

[Linnæus remarks, that it has the appearance of *Halimus*: and Retzius doubts whether it be distinct from *Illecebrum javanicum*. (v. 3.)

9. This is very similar in its white woolly surface to the woolly *Celosias* and *Illecebrums*; from which however it differs in having the leaves opposite, and a solitary globular peduncled terminating head.

It was found in Brasil, on mount Video, by Thouin[g].

10. Stems angular, grooved, even. Leaves like those of Purslane, obovate, obtuse with a point, quite entire, smooth, subpetioled. Spikes solitary, peduncled; peduncle commonly shorter than the leaf[h]. Instead of the calyx there are from one to three linear bractes. Stamens fixed to the nectary at the base. Stigma twin-capitate. Seed single, lens-shaped. It varies, 1. with oblong leaves and peduncled heads: 2. with short roundish leaves ending in a point, and sessile heads: the first from Sumatra, and the second from Malaba[i].

It was introduced here in 1780; and flowers in july and august[k].

11. Stems two feet high, prostrate, round, little branched, geniculated, silky with appressed hairs, glaucous, ending in a subpanicled spike, on a long peduncle and leaflets. Root-leaves and lower stem-leaves oblong, narrowing gradually at the base into the petiole, quite entire, four or five inches long, dotted on both sides, silky on the reverse and at the edges, thickish, and roughish to the touch. Stem-leaves opposite, smaller, remote; the upper subsessile and subovate. Spikelets oblong, compact, the side ones sessile. The proper peduncles visible only with a glass, and defended with a woolly fascicle. Native of S. Domingo[l]. Introduced 1784, by Monf. Thouin[m].

12. Stems prostrate, branching, ending in more elongated branches, a span long, and hoary. Lower leaves crowded almost into a tuft; the rest in whorls and subulate. Spikes oppolite and terminating, somewhat oblong, whitish and reddish, very beautiful[n].

According to Retzius, the root is somewhat branched and woody. The stem divaricate and tomentose, with brachiate branches. Leaves like those of *C. corymbosa* and naked. Stipules, if any, very like the leaves. Spikes numerous, solitary, peduncled seldom sessile, the thickness of a crow quill;

[a] Hort. kew. [b] Swartz. [c] Hort. kew. [d] Linn. mant. [e] Hort. kew. [f] Linn. suppl. [g] Linn. syst. [h] Retz. [i] Hort. kew. [k] Jacq. mifc. [l] Hort. kew. [m] Linn. suppl.

the florets imbricate, woolly on the outside, with a five-leaved calyx.

Native of the East-Indies. Introduced in 1778 by Sir Joseph Banks, Baronet [1].

13. Stem almoſt upright, ſtriated. Leaves blunt, petioled, rugged. Racemes ſimple: glomerules alternate, remote, ſeſſile, with about two flowers, and even. Calyxes ſcarioſe. Capſule pitcher-ſhaped, with a contracted mouth, lidded, longer than the calyx, many-ſeeded. It reſembles *Achyranthes polygonoides*. *C. tricyna* differs from this in being thrice the ſize, in having an even ſtem, ovate acuminate leaves, many-flowered peduncled glomerules, and a globular capſule.

Sent from Tranquebar by Koenig.

14. Stem upright. Leaves alternate, petioled, cordate, acuminate, entire. Racemes axillary, ſolitary, and ſeveral long terminating ones. Flowers ſmall, on very ſhort pedicules. The calyx has two minute leaflets preſſed cloſe. Petals ovate, ſomewhat concave. Filaments dark-coloured dilated at the baſe, ſo that they ſurround the germ, which is roundiſh-three-cornered. Stigmas ſimple. Berry black, incloſing three broadiſh ſeeds, concavo-convex, ſhining.

Found in the Eaſt-Indies by Koenig [1].

PROPAGATION AND CULTURE.

3. In order to have large fine Amaranths, great care ſhould be taken in the choice of the ſeeds; for if they are not carefully collected, the whole expence and trouble of raiſing them will be loſt. The ſeeds muſt be ſown on a hot-bed, which ſhould have been prepared a few days before, that the violent heat may be abated, about the beginning of March; and in about a fortnight's time, if the bed is in good temper, the plants will riſe: but as they are tender when they firſt appear, they require great care for a few days till they get ſtrength; firſt, in giving them a due proportion of air, to prevent their drawing up weak; and next to keep them from too great moiſture, for a ſmall ſhare of moiſture will cauſe their tender ſtems to rot: in ſowing the ſeeds, there ſhould be care taken not to put them too cloſe, for when the plants come up in cluſters, they frequently ſpoil each other for want of room to grow: in a fortnight or three weeks time the plants will be fit to remove, when you muſt prepare another hot-bed, covered with good rich light earth, about four inches thick; which ſhould be made a few days, that it may have a proper temperature of heat; then raiſe up the young plants with your finger, ſo as not to break off the tender roots, and prick them into the new hot-bed about four inches diſtance every way, giving them a gentle watering to ſettle the earth to their roots: but in doing this, be very cautious not to bear the young plants down to the ground by haſty watering.

After the plants are thus planted, they muſt be ſcreened from the ſun till they have taken freſh root; but as there is generally a great ſteam riſing from the fermentation of the dung, which condenſes againſt the glaſſes, and dropping upon the plants, very frequently deſtroys them; the glaſſes ſhould therefore be frequently turned in the day-time, whenever the weather will permit; but if the weather happen to prove bad, it will be of great ſervice to your plants, to wipe off all the moiſture two or three times a day with a woollen cloth, to prevent its dropping upon the plants. When your plants are firmly rooted, and begin to grow, you muſt obſerve to give them air every day (more or leſs, as the weather is cold or hot) to prevent their drawing up too faſt, which greatly weakens their ſtems.

In about a month or five weeks theſe plants will have grown ſo as to meet; therefore another hot-bed ſhould be prepared of a moderate temper, and covered with the ſame rich earth about ſix inches thick, in which they ſhould be planted (obſerving to take them up with as much earth about their roots as poſſible) at ſeven or eight inches diſtance every way, giving them ſome water to ſettle the earth about their roots; but be very careful not to water them heavily, ſo as to beat down the plants, and keep them ſhaded in the heat of the day, until they have taken freſh root; and be ſure to refreſh them often (but gently) with water, and give them air in proportion to the heat of the weather, covering the glaſſes with mats every night, leſt the cold chill your beds, and ſtop the growth of the plants.

In the middle of May you muſt provide another hot-bed, which ſhould be covered with a deep frame, that your plants may have room to grow: upon this hot-bed you muſt ſet as many three-penny pots as can ſtand within the compaſs of the frame; theſe pots muſt be filled with good rich earth, and the cavities between each pot filled up with any common earth, to prevent the heat of the bed from evaporating, and filling the frame with noxious ſteams: then with a trowel, take up your plants with as much earth as poſſible to the roots, and place each ſingle plant in the middle of one of the pots, filling the pot up with the earth before deſcribed, and ſettle it cloſe to the root of the plant with your hands; water them gently, as before, and ſhade them in the heat of the day from the violence of the ſun, by covering the glaſſes with mats; refreſh them often with water, and give them a good quantity of air in the day-time.

In about three weeks more, theſe plants will have grown to a conſiderable ſize and ſtrength, ſo that you muſt now raiſe the glaſſes very much in the day-time; and when the air is ſoft, and the ſun is clouded, draw off the glaſſes, and expoſe them to the open air, and repeat this as often as the weather will permit; which will harden them by degrees, to be removed abroad into the places where they are to remain the whole ſeaſon: but it is not adviſable to ſet theſe plants out until a week in July, obſerving to do it when the air is perfectly ſoft, and if poſſible, in a gentle ſhower of rain.

Let them at firſt be ſet near the ſhelter of a hedge for two or three days, where they may be ſcreened from the violence of the ſun, and ſtrong winds, to which they muſt be inured by degrees: theſe plants, when grown to a good ſtature, perſpire very freely, and muſt be every day refreſhed with water, if the weather prove hot and dry: otherwiſe they will ſtunt, and never produce their plumes ſo fine as they would do if taken care of.

This is the proper management, in order to have fine Amaranths; which, if rightly followed, and the kinds are good, in a favourable ſeaſon, will produce wonderful large fine heads, and are the greateſt ornament to a good garden for upwards of two months: by this method, I have had plants five or ſix feet high, with creſts near a foot in breadth; and I am perſuaded, if the kind be good, (and there be no want of dung, or conveniencies) in a kindly ſeaſon, they will grow much larger.

By the middle or latter end of September, the Amaranths will have perfected their ſeeds, ſo that you muſt make choice of the largeſt, moſt beautiful, and leaſt branching plants of each kind for ſeed; which you ſhould remove under ſhelter, eſpecially if the weather prove wet, or the nights froſty; that the ſeeds may be perfectly ripened: be ſure never to take any ſeeds from ſide branches, nor from the neck of the plume, but only ſuch as are produced in the middle thereof, which in many plants, perhaps, may be but a ſmall quantity; but I do aſſure you, it is only thoſe you can depend upon, to have your kinds good the ſucceeding year.

CELOSIA. See *Celoſia*.

CELSIA. (*The name was given to this plant by Linnæus, in honour of Olaus Celſius, Doct. profeſſor of the Greek language, and afterwards of Theology, in the univerſity of Upſal.*)

*Lin. gen.* n. 757. *Reich.* 815. *Schreb.* 1015. *Juſſ.* 124. *Gærtn.* t. 53.

Claſſ.

[1] Hort. Kew. [1] Retz.

Claſſ. 14. 2. Didynamia Angioſpermia.
Nat. order of *Luridæ*. *Solaneæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-parted; *diviſions* lanceolate, obtuſe, length of the corolla, permanent.
COR. Monopetalous, rotated; *Tube* extremely ſhort; *Border* flat, half-five cleft, unequal; *diviſions* roundiſh, of which the two ſuperior ones are ſmaller, the inferior one larger.
STAM. *Filaments* four, capillary, inclined towards the ſmalleſt diviſions of the corolla; of which the two longer ones are ſhorter than the corolla, and are outwardly woolly. *Anthers* roundiſh, ſmall.
PIST. *Germ* roundiſh. *Style* filiform; length of the ſtamens. *Stigma* obtuſe.
PER. *Capſule* roundiſh, compreſſed at the tip, acuminate, ſitting on the calyx, bilocular.
SEED. Very many, ſmall, angular. Receptacles ſolitary, hemiſpherical.

ESSENTIAL CHARACTER.

*Cal.* five-parted. *Cor.* rotated. *Filam.* bearded. *Capſ.* two-celled.

SPECIES.

1. Celtis orientalis. *Oriental Celtis.*
*Lin. ſpec.* 866. *Reæb.* 3. 150. *hort. cliff.* 321. *upſ.* 179. *t.* 2. *Gærtn. fruct.* 1. 262.
Verbaſcum orientale, Sophiæ fol. *Tourn. cor.* 8. *Buxb. cent.* 5. 17.
Blattaria orient., Agrimoniæ fol. *Buxb. cent.* 1. 14. *t.* 20.
*Leaves bipinnate.*

[2. Celtis Arcturus. *Scollop-leaved Celtis.*
*Lin. ſyſt.* 561. *Reich.* 3. 151.
Verbaſcum Arcturus. *Lin. ſpec.* 254. *mant.* 339. *Jacq. hort.* 2. *t.* 117.
Verbaſcum. *Bauh. pin.* 240. *Col. ecphr.* 2. 81. *t.* 82. *Alp. exot.* 123. *t.* 122.
*Radical leaves lyrate-pinnate, peduncles longer than the flower.*
3. Celtis cretica. *Great-flowered Celtis.*
*Lin. ſyſt.* 561. *Reich.* 3. 151. *ſuppl.* 281.
Blattaria perennis cretica incana, fol. binis conjugatis. *Mor. hiſt.* 2. 488.
*Radical leaves lyrate, ſtem-leaves ſubcordate embracing, flowers ſubſeſſile.*
4. Celtis linearis.
*Jacq. collect.* 2. 270. *n.* 210. *ic.* 2. *t.* 13. *Curt. magaz. t.* 210.
*Leaves very linear toothletted.*]

DESCRIPTIONS, *&c.*

1. Leaves oblong, finely divided almoſt to the midrib on both ſides, lying flat on the ground: from the centre of theſe a round herbaceous ſtalk riſes near two feet high, with leaves of the ſame ſhape the whole length, but gradually diminiſhing in ſize to the top: they are placed alternately, and at the foot-ſtalk of each come out the flowers, more than half the length of the ſtalk: they are of an iron colour on the outſide, but pale yellow within, ſpreading open like thoſe of common Mullein; but they are not ſo regular. It flowers in june, and the ſeeds ripen in ſeptember.

Native of the Levant. Tournefort ſent the ſeeds from Armenia to the Royal garden at Paris, whence this plant has been communicated to moſt parts of Europe. It is an annual; but in England it will rarely ripen its ſeeds, unleſs the plants come up in the autumn, and live through the winter.

[It was cultivated in 1739, in Cheſea garden[a].

2. Leaves oppoſite (others ſay alternate), the loweſt pinnate or ſublyrate; leaflets lateral minute; the upper ones ſimple. Floral leaves ſeſſile, cordate, ſerrate-toothed. Raceme terminal, long. Peduncles ſolitary, one-flowered, longer than the floral leaves. Corolla yellow. Filaments four only, with a purple beard. Native of Crete[b]. Biennial. Cultivated about 1780[c].

3. Leaves pinnate-lyrate alternate; the upper ones ſimple cordate-ſtem-claſping. Flowers ſeſſile. Calyxes ſerrated. Filaments four, the two upper hairy, the lower gloſſy and the anthers larger. Corolla yellow with two ferruginous ſpots at the upper part of the tube[d]. Native of the Eaſt-Indies. Introduced 1776, by Monſ. Thouin. It flowers in july. Biennial[e].

4. This is an elegant, evergreen, ſmooth ſhrub. The trunk is woody, but weak, the thickneſs of a quill, ſtriated, pale brown, three feet high, putting out numerous ſpreading branches its whole length: the younger ones green, grooved and very leafy. Leaves growing three together, lanceolate-linear, acute, thinly ſerrate, or ſometimes quite entire, ſhining on both ſides, ſubpetioled, ſpreading much, the largeſt two inches long. Peduncles axillary, ſolitary, one-flowered, ſhorter than the leaves, and three together. Corolla brilliant ſcarlet, with a blood-red throat: when expanded irregularly bent back at the ſides[f].—Profeſſor Jacquin received it from Ortega of Madrid. It was found in Peru by Dombey; and was introduced here from France by Mr. Williams[g].]

PROPAGATION AND CULTURE.

1. If the ſeeds are ſown on a warm dry border as ſoon as they are ripe, the plants will often come up and live through the winter, if the ſoil be poor: in rich ground they are apt to grow rank, and then they are generally deſtroyed by the early froſts, or will rot with much wet: but if the plants ſhould not riſe the ſame autumn, there will be little hazard of their growing the following ſpring. They require no other care but to keep them clean from weeds, and thin them if they are too cloſe; for they do not bear removing well, and ſhould therefore be ſown where they are intended to remain.

Sometimes, when the ſeaſon proves warm, the plants ſown in the ſpring produce ripe ſeeds, but theſe cannot be depended on.

[2, 3. The ſecond and third ſpecies require the protection of the greenhouſe.

4. May be propagated both by ſeeds and cuttings. It ſucceeds beſt in a moderate ſtove, but will bear to be treated as a tender green-houſe plant[h].

CELTIS (*Celtis, Plin.*)

Engl. *Lote* or *Nettle-tree.* Fr. *Micocoulier.*
Ital. *Lote.* Germ. *Leim baum.*
*Lin. gen. n.* 1143. *Reich.* 1267. *Schreb.* 1591. *Tourn.* 383. *Juſſ.* 408.
Claſſ. 23. 1. Polygamia Monoecia.
Nat. order of *Scabridæ*. *Amentaceæ* Juſſ.

GENERIC CHARACTER.

* *Hermaphrodite* flowers ſolitary ſuperior.
CAL. *Perianth* one-leafed, five-parted; *diviſions* ovate, patulous, withering.
COR. none.
STAM. *Filaments* five, very ſhort, concealed at firſt by the anthers, but after the ſhedding of the pollen growing longer. *Anthers* oblong, thickiſh, quadrangular, four-furrowed.
PIST. *Germ* ovate, acuminate, length of the calyx: *Styles* two, ſpreading, variouſly inflected, ſubulate, pubeſcent on every ſide, very long. *Stigmas* ſimple.
PER. *Drupe* globular, one-celled.
SEED. *Nut* roundiſh.
* *Male flowers* on the ſame plant, inferior.
CAL. *Perianth* ſix-parted, the reſt as in the Hermaphrodites.
COR. none.
STAM. ſix, the reſt as in the Hermaphrodites.

ESSENTIAL CHARACTER.

HERM. *Cal.* five-parted. *Cor.* none. *Stam.* five. *Styles* two. *Drupe* one-ſeeded.
MALE. *Cal.* ſix-parted. *Cor.* none. *Stam.* ſix.

SPECIES.

1. Celtis auſtralis. *European Nettle-tree.*
*Lin. ſpec.* 1478. *Reich.* 4. 334. *hort. cliff.* 39. *Gouan. hort. monſp.* 512. *Seog. carn.* n 1232. *Hall. helv. n.* 1619. *D'Alib. auct. n.* 970. *Du Roi, barbece.* 1. 141. *Pallas, Roſs.* 1. 19. *Villars, dauph.* 3. 800.
LOTUS. *Bauh. pin.* 447. *Cam. epit.* 155. *Lob. ic.* 2. 186.
*Leaves ovate-lanceolate.*

[a] Linn. [b] Hort. kew. [c] Curtis. [d] Jacq. collect. [e] Reid.
[f] Hort. kew. [g] Linn. [h] Hort. kew.

2. Celtis occidentalis. *American Nettle-tree.*
*Lin. spec.* 1478. 3. *Reich.* 4. 335. *Mill. fig.* t. 88. *Gron. virg.* 2. 158.
Lotus virginiana, fr. rubro. *Raii hist.* 1917.
*Leaves obliquely ovate-lanceolate serrate acuminate.*

3. Celtis orientalis. *Oriental Nettle-tree.*
*Lin. spec.* 1478. 2. *Jacq.* 912. *Reich.* 4. 335. *fl. zeyl. n.* 369. *hort. cliff.* 83. (Ulmus 1.) *Thunb. jap.* 114.
Salvifolia arbor, &c. *Pluk. alm.* t. 221. *f.* 4.
Mallam-toddali. *Rheed. mal.* 4. 83. *t.* 40.
Papyrus spuria. *Kempf. amen.* 474. *t.* 473. *f.* 2.
*Leaves obliquely cordate serrate ellipsoid underneath.*

4. Celtis americana.
*Mill. dict. n.* 4. *Plum. cat.* 18.
*Leaves oblong-ovate obtuse nerved, smooth above, golden beneath.*

[5. Celtis tricrantha. *Jamaica Nettle-tree.*
*Swartz. prodr.* 53. *Act. holm. kenn.* 237.
Rhamnus tricranthus. *Lin. spec.* 280. *Reich.* 1. 542. *Amoen.* 5. 395. *Brown. jam.* 173. *t.* 12. *f.* 2.
*Plum. ic. t.* 206. *f.* 1.
*Leaves obliquely cordate ovate-lanceolate serrulate somewhat rugged on the upper surface.*

6. Celtis aculeata.
*Swartz. prodr.* 53. *obs.* 92.
Rhamnus iguaneus. *Jacq. amer.* 74. *t.*
*Leaves cordate-ovate, blunt at the tip, almost entire, very smooth, branches prickly.*

✦. Celtis lima.
*Swartz. prodr.* 53.
Loti arboris folio anguft. arbor baccifera. *Sloan. jam.* 2. 80. *n.* 9.
Muntingia fol. ulmi aſpero. *Plum. gen.* 47?
*Leaves ovate-lanceolate acuminate obliquely cordate ſerrate very rugged above.*]

DESCRIPTION, &c.

1. The European Nettle-tree, or Lote-tree with a black fruit rifes with an upright ſtem to the height of forty or fifty feet, with many ſlender branches, which have a ſmooth dark-coloured bark, with ſome gray ſpots. Leaves alternate, near four inches long, and about two broad in the middle. Flowers axillary all along the branches; being compoſed of a green calyx without any corolla they make no appearance; they come out in the ſpring at the ſame time with the leaves, and generally decay before theſe are arrived at half their ſize. The fruit is the ſize of a pea and black. [According to Pallas, it is the ſize of a ſmall cherry, firſt yellow, then livid, on a long pedunclc.]

It grows naturally in the ſouth of Europe, where it is one of the largeſt trees. [D'Aſſo mentions ſome of a prodigious height and girt in Spain: and Pallas ſays, that they attain the ſize of the Elm in the Cherſoneſus Taurica.] It is not ſo common in England as the ſecond, nor do I remember to have ſeen but two large trees of this ſort in the Engliſh gardens; one of which was formerly growing in the Biſhop of London's garden at Fulham, but was cut down ſome years paſt, with many other curious exotic trees, which were there growing in great perfection: the other was in the garden of Dr. Uvedale at Enfield, which had frequently produced fruit, but was never propagated in this country, nor were any young plants in the gardens, till about 1751, when I procured a good quantity of the fruit from Italy, which I communicated to ſeveral of my friends.

[The wood of this tree is one of the hardeſt we are acquainted with. Evelyn ſays that it was anciently uſed for flutes and other muſical inſtruments, and that haſts for knives and tools were made of the root. When it arrives at any ſize, its hardneſs, toughneſs and flexibility muſt entitle it to more important ſervices. Its fine regular ſpreading head of a chearful green colour, renders this tree extremely proper for clumps in parks, groves, ſingle trees or avenues *.

* Boutcher.

Of the branches are made hoops for caſks, and fiſhing-rods. The berries are eaten by birds, and alſo by children in the ſouth of Europe †.]

2. The American Nettle-tree riſes with a ſtraight ſtem, which in young trees is ſmooth and of a dark colour; but as they advance it becomes rougher and of a lighter green. The branches ſpread very much. The leaves are alternate, and on pretty long foot-ſtalks: [they are tender, ovate-lanceolate, a little pubeſcent; when full grown broad-ovate, acuminate, at the point and baſe quite entire, in the other parts ſerrate, naked, nerve-veined, the hinder ſide only half the ſize of the other.] The flowers come out oppoſite to the leaves upon long pedunclcs. The fruit is ſmaller than that of the firſt ſort, and when ripe of a dark purple colour.

[It is very nearly related to the foregoing ſpecies ‡; but the leaves are much broader and ſhorter.]

It grows naturally in North-America, and in a moiſt rich ſoil becomes a very large tree. [Evelyn ſays, that John Tradeſcant, junior, firſt brought it from Virginia.]

It flowers in may, and the ſeeds ripen in october. There are many large trees of this ſort in the Engliſh gardens, ſome of which produce great quantities of fruit annually, which in favourable ſeaſons come to maturity; and there are few years in which the fruit is not ſent from America.

This tree comes out late in the ſpring, but it is the lateſt in fading of any deciduous tree; nor do the leaves alter their colour long before they fall, but continue in full verdure till within a few days of their dropping off; ſo that the litter occaſioned by the falling leaves may be ſoon clcared away. There is little beauty in the flower or fruit; but the branches being well clothed with leaves of a fine green colour, the trees, when mixed with others in plantations, make a pleaſing variety during the ſummer ſeaſon.

The wood of this tree being tough and pliable, is eſteemed by coachmakers for the frames of their carriages.

3. The Oriental Nettle-tree riſes with a ſtem about ten or twelve feet high, dividing into many branches, which ſpread horizontally on every ſide, and have a ſmooth greeniſh bark. The leaves are about an inch and half long, and near an inch broad, inclining to a heart ſhape, but oblique, one ſide of the baſe being ſmaller and lower than the other; they are of a thicker texture than thoſe of the common ſort, and of a paler green, alternate as they are, and on ſhort foot-ſtalks. [Linnæus adds, that they are very finely ſerrate, and the nerves underneath ſmooth. The pedunclcs are axillary, very ſhort and branching.] The fruit is oval and yellow, when fully ripe it turns to a darker colour. The wood of this tree is very white.

It is a native of the Levant, and was diſcovered by Tournefort in Armenia, whence he ſent the fruit to the royal garden at Paris. The trees there raiſed produced fruit, and from them the other gardens in Europe have been furniſhed. [Mr. Miller cultivated it in 1748 §. It yields a gum like that of the Cherry ‖: and have been found to be a native of the Eaſt-Indies, Japan, and the Society Iſles.]

4. This riſes with a ſtraight trunk near twenty feet high, covered with a gray bark, and dividing at top into many branches. Leaves near four inches long, and two and a half broad, rounded at their extremity, of a thick texture, very ſmooth on their upper ſurface, and on their under of a lucid gold colour. The fruit is round and red.

It was firſt diſcovered by Father Plumier, in the French Weſt India iſlands; and it was found in Jamaica by Dr. Houſtoun, who ſent the ſeeds to England.

[5. This ſhrubby tree ſeldom riſes above ten or twelve feet, and throws out a great number of looſe branches ¶.

† D'Aſſo. ‡ Linn. ſpec. § Hort. kew. ‖ Thunb. ¶ Brown.

Native of Jamaica. Introduced in 1788, by Mr. Gilbert Alexander.' It flowers in auguſt and ſeptember[a].

6. This is an inelegant little tree; the branches are pliant, very long, ſcarcely divided, reclining, and have frequently alternate, diſtich branchlets their whole length, the upper ones gradually ſhorter. There are axillary ſpines at the leaves and branchlets, which are ſubulate, very ſharp, ſtrong and ſhort, recurved, ſolitary or in pairs. Leaves lanceolate, acuminate, ſlightly tooth-ſerrate here and there, ſmooth, petioled, alternate, diſtich, commonly three or four inches in length, but ſometimes eight. Racemes axillary, ſmall, one, two or three together. Flowers monoecious, ſmall, yellow: calyx divided into five ovate concave ſpreading ſegments, with hardly any tube, and no ſcales. The females have two patulous ſtyles with bifid ſtigmas. Inſtead of the piſtil in the males, is an oblong truncate body, only half the length of the calyx. Drupe roundiſh or ovate, crowned with the withering ſtyle, yellow, double the ſize of a Pea, containing a ſweet pulp which is eaten by the natives and by children: the ſtone or nut is wrinkled, thick, bony, white, one-celled.

Native of the Caribbee iſlands, and the neighbouring continent[b].

It is remarked by Swartz, that the *Rhamnus iguanaeus* of Linnæus ſhould be placed in this genus, on account of its monoecous flowers, its calyx without petal-like ſcales, its two ſtyles, and its fruit: he doubts however whether this and that of Jacquin deſcribed above be the ſame plant.

It has the name of *Iguanaeus*, becauſe it grows in rocky places, ſuch as are frequented by the Iguana.

7. Height fifteen feet, trunk ſtraight, with a ſmooth reddiſh or light brown bark, and ſeveral branches ſpreading towards the top. Leaves alternate, half an inch diſtant from each other, two inches long, and half as broad near the baſe, dark green, petioled. Flowers axillary, ſmall, greeniſh. Fruits orange-coloured, no bigger than a pin's head, oval, inſipid, having an orange-coloured pulp, and one ſmall black round ſtone or ſeed within[c].

Native of the Weſt Indies.]

PROPAGATION AND CULTURE.

Theſe trees are all propagated by ſeeds, which ſhould be ſown ſoon after they are ripe, when they can be procured at that ſeaſon, for theſe frequently come up the following ſpring: whereas, thoſe which are ſown in the ſpring, will not come up till a twelvemonth after: therefore it is the beſt way to ſow them in pots or tubs, that they may be eaſily removed, for thoſe which are ſown in the ſpring ſhould be placed in a ſhady ſituation in ſummer, and conſtantly kept clean from weeds; but in autumn they ſhould be placed in a warm ſituation, plunging the pots into the ground; and if they are covered over with a little tan from a decayed hot-bed, it will prevent the froſt from penetrating the earth to injure the ſeeds; and if theſe pots are placed on a gentle hot-bed in the ſpring, it will greatly forward the vegetation of the ſeeds, whereby the plants will have more time to get ſtrength before the winter: but when the plants appear above ground they muſt have a large ſhare of air admitted to them, otherwiſe they will draw up weak; and as ſoon as the weather is warm, they muſt be expoſed to the open air, and in ſummer they muſt be conſtantly kept clean from weeds; if the ſeaſon proves dry, they will require water two or three times a week. In autumn it will be proper to remove the pots, and place them under a hot-bed frame, to ſhelter them in winter from ſevere froſt: or where there is not that conveniency, the pots ſhould be plunged into the ground near a wall or hedge; and as the plants, when young, are full of ſap, and tender, the early froſts in autumn frequently kill the upper part of the ſhoots; therefore the plants ſhould be either covered with mats, or a little ſtraw or Peaſe-haulm laid over them to protect them.

In the following ſpring the plants ſhould be taken out of the ſeed-pots, and planted in the full ground: this ſhould be done about the middle or latter end of march, when the danger of the froſt is over: therefore a bed or two ſhould be prepared (according to the number of plants raiſed) in a ſheltered ſituation, and, if poſſible, in a gentle loamy ſoil. The ground muſt be well trenched, and cleared from the roots of bad weeds, and when levelled, ſhould be marked out in lines at one foot diſtance; then the plants ſhould be carefully turned out of the pots and ſeparated, ſo as not to tear their roots, and planted in the lines at ſix inches aſunder, preſſing the earth down cloſe to the roots. If the ground is very dry when they are planted, and there is no appearance of rain ſoon, it will be proper to water the beds, to ſettle the ground to the roots of the plants; and after this, if the ſurface of the ground is covered with ſome old tan or rotten dung, it will keep it moiſt, and prevent the drying winds from penetrating to the roots of the plants.

The following ſummer, the neceſſary care muſt be to keep them conſtantly clean from weeds; but after the plants are pretty well eſtabliſhed in the ground, they will not require any water, eſpecially toward the latter end of ſummer, for that will occaſion their late growth, whereby they will be in great danger of ſuffering by the autumn froſts; for the more any of theſe young trees are ſtopped in their growth by drought towards autumn, the firmer will be their texture, ſo better able to bear the cold.

The plants may remain in theſe nurſery-beds two years, by which time they will have obtained ſufficient ſtrength to be tranſplanted where they are deſigned to remain for good, becauſe theſe plants extend their roots wide every way; ſo that if they ſtand long in the nurſery, their roots will be cut in removing, which will be a great prejudice to their future growth.

Theſe ſorts are hardy enough to thrive in the open air in England, after they are become ſtrong; but for the two firſt winters after they come up from ſeeds, they require a little protection, eſpecially the third ſort, which is tenderer than either of the former. The young plants of this ſort frequently have variegated leaves, but thoſe are more impatient of cold than the plain leaved.

4. The ſeeds of this ſort rarely come up the firſt year, ſo they may be ſowed in pots, and plunged into the tan-bed in the ſtove, where they ſhould remain till the plants come up. Theſe plants muſt be conſtantly kept in the bark-ſtove, and treated in the ſame manner as other tender exotics.

[Mr. Boutcher recommends to ſow the ſeeds of the common Nettle-tree in ſpring, ſoon after they are ripe, which is in january, in pots or boxes, a foot deep, with holes in the bottom, covered with oyſter-ſhells or tile-ſherds, and three or four inches thick of rough gravel over them, to drain the moiſture: then to fill them within an inch of the top with rich looſe compoſt mould; ſow the ſeeds, and ſift over them half an inch more of the ſame earth. Theſe pots or boxes ought not to be ſunk into the earth, but to be raiſed ſix or eight inches by ſtones or logs of wood, and placed where they may receive the morning ſun only, till autumn, when they ſhould be removed under a ſouth wall, and in ſevere weather be put under a covered frame, the covering being taken off in mild weather. About the beginning of april remove them to their firſt ſituation, looſen the earth gently, and ſift on a little freſh mould. The end of april moſt of the plants will appear, when they muſt be frequently but moderately watered, kept clean in ſummer, and protected as before in ſevere weather.

If you would propagate them by layers, let them be layed as ſoon as the leaves begin to tarniſh at the end of ſeptember, or beginning of october. The wood being extremely hard, they will not root ſufficiently till the ſecond year, unleſs the ſeaſon is

wet, or you aſſiſt them with pleatiful waterings. Take them up the end of march or beginning of april, and plant them in rows at two feet and a half diſtance, and a foot aſunder, giving them frequent waterings, keep the ground clean, and let them remain here two years. They may then be planted out for good or removed again to greater diſtances, to ſtand three years more*.

This tree will do in any ordinary land, but ſucceeds beſt in a deep moiſt ſoil, where it will ſoon become a ſtately tree.

CEMBRA. See *Pinus*.

CENCHRAMIDIA. See *Cluſia* and *Theobroma*.

CENCHRUS. (Κεγχρος, *Theoph. & Dioſc.*)
*Lin. gen. n.* 1149. *Reich.* 1255. *Schreb.* 1574. *Gærtn. t.* 80. *Juſſ.* 30. Panicaſtrella. *Mich.* 31.
Claſſ. 23. 1. Polygamia Monoecia.
Nat. order of *Graſſes*.

GENERIC CHARACTER.

CAL. *Involucres* many, laciniate, echinate, gathered into a head, each ſeſſile, including three calyxes; biflorous.
*Perianth* a bivalve-glume, lanceolate, concave, acuminate, biflorous, ſhorter than the corolla.
COR. one male, the other hermaphrodite.
*Proper* each bivalve; valves lanceolate, acuminate, concave, awnleſs; the interior one ſmaller.
STAM. to each three *filaments*, capillary, length of corolla. *Authers* ſagittate.
PIST. *Germ* of the hermaphrodite roundiſh. *Style* filiform, length of the ſtamens. *Stigmas* two, oblong, hairy, ſpreading.
PER. none.
SEED roundiſh.
OBS. *There is a ſpecies which has all the flowers hermaphrodite.* R.

ESSENTIAL CHARACTER.

*Involucres* laciniate, echinate, two-flowered. *Cal.* Glume two-flowered, one male, the other hermaphrodite.
HERM. *Cor.* Glume awnleſs. *Stam.* three. *Seed* one.
MALE. *Cor.* Glume awnleſs. *Stam.* three.

SPECIES.

1. Cenchrus racemoſus. *Branching Cenchrus.*
*Lin. ſpec.* 1487. *ſyſt.* 906. *Reich.* 4. 312. *mant.* 501. *Gouan. hort. monſp.* 514. *Villars dauph.* 2. 178.
Agroſtis. *Lin. mant.* 501. *Schreb. graw.* 45. *t.* 4. *Ger. prov.* 83.
Tragus. *Hall. helv. n.* 1413.
Gramen caninum. *Bauh. pin.* 2. 10. *prodr.* 2. *t.* 2. *Scheuch. gram.* 76. *Barr. ic.* 718.
*Panicle ſpiked, glumes muricated with ciliary briſtles.*
2. Cenchrus lappaceus. *Burr Cenchrus.*
*Lin. ſpec.* 1488. *Reich.* 4. 313.
*Branches of the panicle very ſimple, corollas bifpid backward, calyxes three-valved two-flowered.*
3. Cenchrus muricatus.
*Lin. ſyſt.* 907. *Reich.* 4. 313. *mant.* 302. *Schreb. gram.* 2. 69. *t.* 34.
*Spike muricated, ſcales various mucronated.*
4. Cenchrus capitatus. *Oval-ſpiked Cenchrus.*
*Lin. ſpec.* 1488. *ſyſt.* 907. *Reich.* 4. 314. *Ger. prov.* 107. *Gouan. hort. monſp.* 515. *Lyeſt. it.* 172. *Villars dauph.* 2. 178.
Gramen. *Bauh. pin.* 7. *prodr.* 16 *Scheuch.* 74. *t.* 2. *f.* 7. *Col. ecphr.* 1. 340. *t.* 338. *f.* 1. *Barr. var.* 1176. *t.* 28. *f.* 1. & *t.* 862. *f.* 2. *Monti, ic.* 102. *Reliq. Rudb. t.* 7. *f.* 1.
*Spike ovate ſimple.*
5. Cenchrus echinatus. *Rough-ſpiked Cenchrus.*
*Lin. ſpec.* 1488. *Reich.* 4. 314. *Brown. jam.* 367. *n.* 1. *Schreb. gram.* 2. 9. *t.* 23. *f.* 1. *Gærtn. fruct.* 2. 4.
Panicaſtrella. *Mich. gen.* 36. *t.* 31.
Gramen. *Scheuch.* 77. *Plak. ahn. t.* 92. *f.* 3. *Sloan. jam.* 1. 108. 11. *Raii ſuppl.* 602. 13. *Mor. hiſt.* 3. 195. *n.* 5.
*Spike oblong conglomerate.*
6. Cenchrus tribuloides.
*Lin. ſpec.* 1489. *Reich.* 4. 314. *Gron. virg.* 122. 160.

* Boutcher.

Panicaſtrella. *Mich. gen.* 37.
Gramen. *Sloan. jam.* 1. 108. *n.* 12. *t.* 65. *f.* 1. *Raii ſuppl.* 602. 14. *Mor. hiſt.* 3. 195. *ſ.* 8. *t.* 5. *f.* 4.
*Spike glomerate, female glumes globular muricate-ſpiny briſtate.*
7. Cenchrus ciliaris. *Ciliated Cenchrus.*
*Lin. ſyſt.* 907 *Reich.* 4. 315. *mant.* 302.
*Spike with ſetaceous ciliated four-flowered involucels.*
8. Cenchrus granularis.
*Lin. ſyſt.* 907. *Reich.* 4. 315. *mant.* 575. *Retz. obſ.* 4. 14.
Manifuris granularis. *Swartz prodr.* 25. *Sloan. jam.* 1. 128. *t.* 80.
*Racemes double, fruits globular wrinkle-netted.*
9. Cenchrus frutecſcens.
*Lin. ſpec.* 1489. *Reich.* 4. 315.
Arundo. *Alp. exot.* 105. *t.* 104.
Gr. orientale ſpic. frutic. &c. *Tourn. cor.* 39.
*Heads lateral ſeſſile, leaves mucronated, ſtem ſcrubby.*
10. Cenchrus ſetoſus.
*Swartz prodr.* 26.
*Spike linear-oblong, involucres briſtly, briſtles unarmed, the interior ones villoſe at the baſe, hairs ciliate, glumes even.*
11. Cenchrus purpuraſcens.
*Thunb. in Linn. tranſ.* 2. 329.
Panicum hordeiforme γ. *Thunb. jap.* 48.
*Raceme ſpiked ſimple, floret's ſurrounded with very long awns, culm erect.*

DESCRIPTIONS, &c.

1. Calyx three-flowered, ovate-oblong, cartilaginous, echinated. Corolla membranaceous, ſeſſile, the length of the calyx. The middle flower male, with a one-valved calyx, like the others, echinated and pedicelled. Culm reclining. Leaves ciliate[b]. After the flowering is paſt the glumes grow red[c]. Schreber and Gerard, finding no involucre, and all the flowers hermaphrodite, range this ſpecies under the genus *Agroſtis*.—Native of the ſouthern parts of Europe, on the coaſt of Egypt, and the Eaſt Indies.
Introduced in 1771 by Monſ. Richard. It flowers in july and auguſt[d].

2. Culm branching, even. Leaves cordate-lanceolate, rugged about the edge. Panicle ſpreading very much: branchlets horizontal, quite ſimple, capillary. Spikelets alternate, pedicelled, ovate-oblong. The upper flower barren or male. The outer glume of the corolla having the upper part of the ſides muricated with ſhort ſtiff reflected briſtles, knotted at the baſe.—Native of the Eaſt Indies[e]. Introduced 1773 by John Earl of Bute[f].

3. Culm procumbent, a ſhort ſpan in length, branching, leafy. Leaves ſoft, hairy eſpecially underneath, ſheathing. Peduncle terminal, filiform. Spike oblong, directed one way, naked: rachis membranaceous on both ſides, jointed, flexuoſe. Flowers in little balls heaped at the joints of the rachis, crowded, ſeſſile, ſquarroſe, conſiſting of ſtiff, ſmooth, ſtriated, expanded, mucronated, ovate-lanceolate and ſubulate ſcales mixed. Hence it has the appearance of *Tripſacum androgynum*.——Native of the Eaſt-Indies[g].

4. The culm is only three or four inches high, and has only one joint. Spike round, like a little ball ſet with prickles.—South of France[h] and Italy. Introduced 1771 by Monſ. Richard[i].

5. This is one of the moſt common ſorts of graſs in the open paſtures of Jamaica, and is looked upon both as a wholeſome and pleaſant food for all ſorts of cattle[k].—Native of the Weſt Indies and the Society Iſles. Cultivated 1691, by Mr. Doody[l].

6. Culms many trailing round yellowiſh crooked, a foot and half long, the joints an inch and half diſtant; leaves two or three inches long, harſh like thoſe of the Carex, the ſheaths covering the internodes. Spike an inch and half long, ſet at ſhort intervals with ſmall burrs[m].—Native of Virginia and Jamaica.

[b] Linn. [c] Gouan. [d] Hort. kew. [e] Linn. ſpec. [f] Hort. kew. [g] Linn. mant. [h] Gouan and Villars. [i] Hort. kew. [k] Browne. [l] Hort. kew. [m] Sloane.

7. Culm aſcending, gloſſy, the thickneſs of a thread, a ſhort ſpan in length, with inflected joints. A ſtriated ſheath to the leaves. Spike round, the thickneſs of a finger, but ſhorter: flowers alternate, ſcattered. Briſtles or awns, forming the involucre, brown; the inner ones longer than the florets, which are ſeſſile, oblong and bivalve; two of them hermaphrodites, and two males.

Obſerved at the Cape, by Koenig[s].—Introduced 1777 by Monſ. Thouin[t].

8. Culms branching, naked, even, flat on one ſide. Leaves even: the ſheaths rough with hairs at the baſe. Racemes axillary, often double. Fruits minute, ſcarcely ſo big as a Cabbage ſeed, globular, wrinkle-netted.—Native of the Eaſt Indies[t].

Retzius ſays, that he has it both from Sumatra and Malabar: both have the leaves and ſheaths clothed with longiſh white hairs. Small bractes ſeparating the flowers in the racemes; more than two of which frequently iſſue from the ſame ſheath.

9. Found by Tournefort in Armenia.

10. Native of the Weſt Indies[v].

11. Culm two feet high. Leaves longer than the culm. Raceme looſe, a ſpan long, with peduncles the length of the florets, ſpreading in a double row. Awns purple, ſix times the length of the florets.—Native of Japan[v].]

CENTAUREA. (Κενταύριον, or κενταυρία βοτάνη, *called alſo* Κενταύρειον *by Dioſcorides. Theophraſtus has an herb called* Κενταυρὶς. *All theſe names are from* Κένταυρος, *a Centaur; and ſuppoſed to be ſo named from Chiron.*)

*Lin. gen. n.* 984. *Reich.* 1066. *Schreb.* 1331. *Juſſ.* 174. Centaurium majus. *Tourn.* 256. Jacea. *Tourn.* 254. *Juſſ.* 173. *Dill. gen.* 13. Cyanus. *Tourn.* 254. *Juſſ.* 174. *Vaill.* Calcitrapa. *Vaill.* 1718. *Juſſ.* 173. Calcitrapoides. *Vaill.* Rhaponticum. *Vaill. Juſſ.* 174. Rhapontícoides. *Vaill.* Jacea. *Vaill.* Amberboi. *Vaill.* Crocodilium. *Vaill. Juſſ.* 173.

Claſs. 19. 3. Syngeneſia Polygamia Fruſtranea.

Nat. order of *Compound Flowers. Cinarocephalæ* Juſſ.

GENERIC CHARACTER.

CAL. *Common* imbricate, roundiſh; *ſcales* often variouſly terminated.

COR. *Compound* floſculous, diſcform. *Corollules* hermaphrodite very many in the diſk. *Females* fewer, larger, lax, in the ray.

*Proper* of the hermaphrodite monopetalous; *tube* filiform; *border* ventricoſe, oblong, erect, terminated by five *diviſions* which are linear, erect.

Of the *females* monopetalous, funnel-form; *tube* ſlender, gradually enlarged, recurved; *border* oblong, oblique, unequally divided.

STAM. In the hermaphrodites; *Filaments* five, capillary, very ſhort. *Authers* cylindric, tubular, length of the corolule.

PIST. In the hermaphrodites; *Germ* ſmall. *Style* filiform, length of the ſtamens. *Stigma* very obtuſe, projecting in a point which in many is biſid.

In the females; *Germ* very ſmall. *Style* ſcarce any. *Stigma* none.

PER. none. *Calyx* unchanged, converging.

SEEDS. In the hermaphrodites ſolitary. *Down* or *egret in moſt plumoſe or piloſe.*

*In the females none.*

REC. *briſtly.*

OBS. Calcitrapa. Vaill: *has the calyx furniſhed with large ſtraight ſolitary prickles. Seeds naked or crowned.*

Calcitrapoides. Vaill: *Calyx with ſmall crowded prickles.*

Rhapontícum. Vaill: *Calyx with ſcarioſe entire membranes.*

Rhapontícoides. Vaill: *Calyx with lanceolate acuminate ſcales.*

Amberboi. Vaill: *Calyx with obtuſe very ſimple ſcales.*

Jacea. Vaill: *Calyx with ciliated ſcales. Seeds with briſtly down.*

Crocodilium. Vaill: *Calyx with ſquamated ſcales. Seeds with a feathered down.*

ESSENTIAL CHARACTER.

*Recept.* briſtly. *Down* ſimple. *Cor.* of the ray funnel-form, longer, irregular.

SPECIES.

* Jaceæ: *calyxes even unarmed.*

[1. Centaurea crupina. *Black-ſeeded Centaury; Bearded Creeper.* Ray.

*Lin. ſpec.* 1285. *ſyſt.* 784. *Reich.* 3. 896. *hort. cliff.* 420. 1. *upſ.* 271. *Gouan. hort. monſp.* 457. *Ger. prov.* 184. *n.* 1. *Allion. pedem. n.* 572. *Mor.* 7. 25. 3.

Jacea. *Garid. aix. t.* 52.

Chondrilla. *Bauh. pin.* 130. 3. *Barr. ic.* 1136. *Park.* 786. *f.* 4. *Ger. emac.* 287. *f.* 4.

Cyanus. *Bauh. hiſt.* 3. 24. *f.* 1. *Raii hiſt.* 331.

Senecio-Carduus apulus. *Col. ecphr.* 1. 32. *t.* 34.

*Scales lanceolate; leaves pinnate, ſerrate, ſubciliate.*]

2. Centaurea moſchata. *Purple ſweet Centaury,* or *Sweet Sultan.*

*Lin. ſpec.* 1286. *Reich.* 3. 896. *hort. cliff.* 421. 4. *upſ.* 271.

Cyanus. *Mor. hiſt.* 3. 135. *ſ.* 7. *t.* 25. *f.* 5. *Park.* 482. *f.* 3. *parad.* 327. *n.* 2. *Raii hiſt.* 322. *n.* 5.

β. C. Amberboi. *Yellow Sweet Sultan.*

*Mill. dict. n.* 9.

Cyanus. *Mor. ſ.* 9. *Dodart. mem.* 75. *fig.*

*Calyxes roundiſh ſmooth, ſcales ovate; leaves lyrate-toothed—*β. *ſcales obtuſe, leaves laciniate ſerrate.*

[3. Centaurea cruciolia.

*Lin. ſpec.* 1286. *Reich.* 3. 897.

Jacea. *Tourn. inſt.* 444. *Pluk. t.* 39. *f.* 3?

Stœbe. *Bauh. pin.* 273. *n.* 2.

*Scales lanceolate; leaves lanceolate ſomewhat toothed.*]

4. Centaurea Lippii. *Egyptian Centaury.*

*Lin. ſpec.* 1286. *ſyſt.* 784. *Reich.* 3. 897. *Gouan. illuſtr.* 72.

Amberboi. *Iſoard. act. par.* 1719. 169. *t.* 10.

*Scales mucronate; leaves ſubdecurrent lyrate-toothed.*

5. Centaurea alpina. *Alpine Centaury.*

*Lin. ſpec.* 1286. *Reich.* 3. 897.

Centaurium luteum alpinum. *Bauh. pin.* 117. 3. *prodr.* 56. fig. *Mor. hiſt.* 3. 132. *n.* 4. *f.* 7. *t.* 25. *f.* 5. bottom row.—majus. *Corn. canad.* 69. *t.* 70. *Raii hiſt.* 330. *n.* 2. *Park.* 466. *f.* 4.

*Scales ovate-obtuſe; leaves pinnated ſmooth quite entire, the odd leaflet ſerrated.*

6. Centaurea Centaurium. *Great Centaury.*

*Lin. ſpec.* 1287. *Reich.* 3. 898. *Gmel. ſib.* 2. 89. *t.* 41.

Centaurium. *Bauh. pin.* 117. 1. *Cluſ. hiſt.* 2. 10. *f.* 2. *Blackw. t.* 93. *Raii hiſt.* 329. 1. *Ger.* 436. *emac.* 546. *f.* 1. *Park.* 466. *f.* 1.

*Scales ovate; leaves pinnated, leaflets ſerrated decurrent.*

** Cyani: *with the ſcales of the calyx ſerrate-ciliated.*

[7. Centaurea phrygia. *Auſtrian Centaury.*

*Lin. ſpec.* 1287. *Reich.* 3. 898. *fl. ſuec. n.* 775. *Villars dauph.* 3. 49. *Krock. ſileſ. n.* 1454. *Scop. carn. n.* 1021. *Neck. gallob.* 362. *Gouan. illuſtr.* 72. *Fl. dan. t.* 520. *Laur. cochinch.* 508.

Cyanus. *Hall. helv. n.* 188.

Jacea. *Bauh. pin.* 271. *n.* 7, 8. *Cluſ. hiſt.* 2. 7. *f.* 1. *Raii hiſt.* 327. 19.

β. J. alba, hirſuto capite. *Bauh. pin.* 271. 9.

*Calyxes recurve-plumoſe; leaves undivided, oblong ſcabrous.*

8. Centaurea capillata. *Feathered Centaury.*

*Lin. ſpec.* 1287. *ſyſt.* 785. *Reich.* 3. 898.

Cyanus. *Act. gott.* 1. 202. 2. *t.* 6.

*Calyxes recurve-plumoſe; bottom leaves pinnated toothed, upper lanceolate.*

9. Centaurea uniflora. *One-flowered Centaury.*

*Lin. ſyſt.* 785. *Reich.* 3. 896. *mant.* 118. *Ger. prov.* 185. 3. *Gouan. illuſtr.* 172. *Villars dauph.* 3. 50.

Cyanus. *Hall. helv. n.* 189. *Becc. muſ.* 2. 20. *t.* 2. *f.* 3.

*Calyxes recurve-plumoſe; leaves lanceolate ſomewhat toothed tomentoſe.*

10. Centaurea

* Linn. mant. † Hort. kew. ‡ Linn. mant.
§ Swartz. ¶ Thunberg.

10. Centaurea linifolia. *Flax-leaved Centaury.*
*Lin. syst.* 785. *Reich.* 3. 899. *mant.* 117. *Gouan. illustr.* 73. *Tabl. symb.* 1. 73.
Jacea. *Tourn. inst.* 445. *Barr. ic.* 162. (139. *Gouan.*)
*Calyxes recurve-plumose; leaves linear scattered.*

11. Centaurea pectinata.
*Lin. spec.* 1287. *syst.* 785. *Reich.* 3. 899. *Gouan. illustr.* 72. *D'Asso. arag. n.* 859. *Villars dauph.* 3. 48. *Krock. silef. n.* 1456.
Jacea. *Bauh. hist.* 3. 29.
*Calyxes recurve-plumose (erect-plumose, spec.); leaves lyrate toothleted, branch-leaves lanceolate quite entire.*

12. Centaurea nigra. *Black Centaury or Knapweed.*
*Lin. spec.* 1288. *syst.* 785. *Reich.* 3. 900. *Hudf. angl.* 375. *With.* 943. *Lightf.* 498. *Fl. vuls. t.* 130. *Pollich pal. n.* 822. *Villars dauph.* 3. 46. *Krock. silef. n.* 1455.
Jacea nigra laciniata. *Bauh. pin.* 271. 1. *Raii hist.* 325. 12. (good descr.) *syn.* 199. *Ger. emac.* 727. *f.* 1. *Park.* 468. 1. *Petiv. t.* 22. *f.* 8, 9. *Mor. s.* 7. *t.* 28. *f.* 10.
Jacea. *Hall. helv. n.* 184. Cyanus. *n.* 185.
*Calyxes ciliate, with the little scale ovate, ciliat capillary erect; leaves lyrate-angular; flowers fasciular.*

13. Centaurea pullata.
*Lin. spec.* 1288. *Reich.* 3. 900. *Sauv. monsp.* 288. *Gouan. hort.* 458. *flor.* 374. *Villars dauph.* 3. 51.
Jacea humilis alpa, &c. *Bauh. pin.* 271. 2. —— monspessulana, &c. *Bauh. hist.* 3. 29. *f.* 2. *Raii hist.* 327. 21. *Lob. ic.* 542. *f.* 2. *Mor. hist.* 3. 140. *s.* 7. *t.* 28. *f.* 18. *Mill. fig. t.* 152. *f.* 2.
*Calyxes ciliate verticil-leafy; leaves lyrate toothed obtuse.*]

14. Centaurea montana. *Mountain Centaury. Perennial Blue-bottle.*
*Lin. spec.* 1289. *Reich.* 3. 900. *Gouan. hort.* 458. *flor.* 375. *Villars dauph.* 3. 51. *Krock. silef. n.* 1459. *Scop. carn. n.* 1022. *Jacq. austr.* 4. *t.* 371. *Pollich pal. n.* 823. *Mill. fig. t.* 114. *f.* 1. *Curt. mag. t.* 77.
Cyanus. *Bauh. pin.* 273. 1. *Hall. helv. n.* 190. *Lob. ic.* 548. 1. *Blackw. t.* 66. *Bauh. hist.* 3. 23. *f.* 1. *Raii hist.* 322. *n.* 2. *Ger.* 592. *f.* 1. *emac.* 732. *f.* 1. *Park.* 482. *f.* 1.
β. Jacea integrifolia humilis. *Bauh. pin.* 271. 4. *prodr.* 127. 2.
C. angustifolia. *Mill. dict. n.* 7. *fig. t.* 114. *f.* 2. *Hall. helv.* 7.
*Calyxes serrate; leaves lanceolate decurrent; stem quite simple.*

15. Centaurea Cyanus. *Corn Centaury. Annual Blue-bottle.*
*Lin. spec.* 1289. *Reich.* 3. 901. *hort. cliff.* 422. *fl. suec.* 776. *mat. med.* 192. *Hudf.* 375. *With.* 944. *Lightf.* 498. *Scop. carn. n.* 1023. *Pollich pal. n.* 824. *Ger. prov.* 186. 7. *Villars dauph.* 3. 53. *Krock. silef. n.* 1458.
Cyanus. *Bauh. pin.* 273. 2. *Lob. ic.* 546. 2. *Hall. helv. n.* 191. *Blackw. t.* 270. *Ger.* 592. 2. *emac.* 732. 2. *Park.* 482. 2. *Pet.* 22. 4. *Bauh. hist.* 3. 21. 3. *Mor. s.* 7. *t.* 25. *f.* 4. *Raii hist.* 321. 1. *Camer. epit.* 289.
*Calyxes serrate, leaves linear quite entire, the lowest toothed.*

16. Centaurea paniculata. *Panicled Centaury.*
*Lin. spec.* 1289. *syst.* 785. *Reich.* 3. 901. *Scop. carn. n.* 1024. *Pollich pal. n.* 825. *Jacq. austr.* 4. *t.* 320. *Gouan. hort.* 459. *flor.* 375. *D'Asso. aragon. n.* 863. *Villars dauph.* 3. 53. *Krock. silef. n.* 1460.
Cyanus. *Hall. helv. n.* 187. *Park.* 476. *n.* 4.
Jacea. *Mor. hist.* 3. 140. *s.* 7. *t.* 28. *f.* 15.
*Calyxes ciliate, scales flat; leaves bipinnate, branch-leaves pinnatifid linear; stem panicled.*

17. Centaurea spinosa. *Prickly-branched Centaury.*
*Lin. spec.* 1290. *Reich.* 3. 901. *hort. cliff.* 422. *n.* 15.
Cyanus spinosus. *Alp. exot.* 163. *t.* 162.
*Calyxes subtiliate, branches spinous.*]

18. Centaurea ragusina. *Cretan Centaury.*
*Lin. spec.* 1290. *Reich.* 3. 902. *Mill. fig. t.* 152. *f.* 1. (Jacea.)
Jacea. *Mor.* 3. 141. *s.* 7. *t.* 27. *f.* 22. *Zan. hist.* 1. 107. *t.* 43. *Raii hist.* 321. *n.* 15.
Stoebe. *Barr. ic.* 309.
*Calyxes ciliate; leaves tomentose pinnatifid, leaflets obtuse ovate quite entire, the outer ones larger.*

19. Centaurea Cineraria. *White-leaved Mountain Centaury.*
*Lin. spec.* 1290. *Reich.* 3. 903.
Jacea montana, &c. *Bauh. pin.* 271. 4. *prodr.* 128. 7. fig. *Mor. t.* 26. *f.* 30.
β. *Triumf. obs.* 72. *Mor.* 3. 141. *n.* 21. *Barr. ic.* 348, 347. *Jacqu. hort.* 1. *t.* 92.
*Calyxes ciliate terminal-sessile; leaves tomentose bipinnatifid, lobes acute.*

20. Centaurea argentea. *Silvery Centaury.*
*Lin. spec.* 1290. *syst.* 786. *Reich.* 3. 903. *Scop. carn. n.* 1025.
Jacea. *Tourn. cor.* 32. *Barr. ic.* 218.
*Calyxes serrate; leaves tomentose, root-leaves pinnatifid, leaflets earleft.*

[21. Centaurea sibirica. *Siberian Centaury.*
*Lin. spec.* 1291. *Reich.* 3. 903. *Pallas. it.* 1. 43. *Gmel. sib.* 2. 96. *t.* 42. *f.* 2.
*Calyxes ciliate; leaves tomentose undivided and pinnatifid quite entire; stem declined.*]

22. Centaurea sempervirens. *Evergreen Centaury.*
*Lin. spec.* 1291. *syst.* 786. *Reich.* 3. 904. *hort. cliff.* 422. 13. *Bocc. sic.* 73. *t.* 39. *f.* 3.
Jacea lusitanica sempervirens. *Mor.* 139. *t.* 28. *f.* 9. *Dodart. mem.* 85. fig.
*Calyxes ciliate; leaves lanceolate serrate, substipuled at the loweft tooth; lower leaves bafiate.*

[23. Centaurea Scabiosa. *Scabious Centaury or Great Knapweed.*
*Lin. spec.* 1291. *Reich.* 3. 904. *fl. suec. n.* 773. *Hudf.* 376. *With.* 945. *Lightf.* 500. *Sowerby Engl. bot. t.* 56. *Scop. carn. n.* 1026. *Pollich pal. n.* 826. *Villars dauph.* 3. 47. *Krock. silef. n.* 1461.
Cyanus. *Hall. helv. n.* 186.
Scabiosa major. *Matth.* 969.
Jacea major. *Bauh. hist.* 3. 32. 2. Ger. 588. 2. & 583. 5. *Raii hist.* 325. *n.* 11. *syn.* 198.
*Calyxes ciliate; leaves pinnatifid, pinnas lanceolate.*

24. Centaurea tatarica. *Tartarian Centaury.*
*Lin. syst.* 786. *suppl.* 383.
*Calyxes ciliate; leaves pinnate, pinnas lanceolate undivided.*]

25. Centaurea Stoebe.
*Lin. spec.* 1292. *Reich.* 3. 905.
Stoebe. *Bauh. pin.* 273. 7.
*Calyxes ciliate, oblong, leaves pinnatifid linear quite entire.*

[26. Centaurea acaulis. *Stemleſs Centaury.*
*Lin. spec.* 1292. *Reich.* 3. 905. *Shaw. afr. t.* 342. (Jacea.)
*Calyxes ciliate; leaves lyrate; stem scarcely any.*
*** Rhapontica: *with the scales of the calyx dry and scariose.*]

27. Centaurea orientalis. *Oriental Centaury.*
*Lin. spec.* 1291. *syst.* 786. *Reich.* 3. 905. *hort. upſ.* 271.
Cyanus. *Hall. act. angl.* 1744. *v.* 43. *p.* 94. *t.* 4.
*Calyxes scariose-ciliate; leaves pinnatifid, pinnas lanceolate.*

[28. Centaurea Behen.
*Lin. spec.* 1292. *Reich.* 3. 905. *mat. med.* 192. *Gron. orient. n.* 273.
Behen album. *Rauw. itin.* 288. *t.* 40. *Bauh. hist.* 3. 36. *f.* 37.
Serratulæ affinis, &c. *Bauh. pin.* 235.
*Calyxes scariose; radical leaves lyrate, lobes opposite, stem-leaves embracing.*

29. Centaurea repens. *Creeping Centaury.*
*Lin. spec.* 1293. *Reich.* 3. 906.
Jacea. *Tourn. cor.* 32.
*Calyxes scariose; leaves lanceolate subpetioled toothed, peduncles filiform leafleſs.*

30. Centaurea

30. Centaurea Jacea. *Common Centaury* or *Knapweed. Lin. spec.* 1293. *Reich.* 3. 906. *fl. suec. n.* 774. *Villars dauph.* 3. 42. *Krock. silef. n.* 1165. *Pollich pal. n.* 827. *Oed. dan. t.* 519. *Lam. bert. n.* 674.
Rhaponticum. *Hall. helv. n.* 195.—Jacea. *Scop. carn. n.* 1017.
*Calyxes scariose lacerate; leaves lanceolate, radical leaves sinuate-toothed; branches angular.*

31. Centaurea amara. *Bitter Centaury.*
*Lin. spec.* 1292. *fyst.* 786. *Reich.* 3. 906. *Gouan. illustr.* 73. *Krock. silef. n.* 1464.
Cyanus repens latifolius. *Baub. pin.* 274. *Lob. ic.* 548. *f.* 2.
β. Jacea. *Bocc. muf.* 31. *t.* 17.
*Calyxes scariose; leaves lanceolate quite entire; stems decumbent.*

32. Centaurea alba. *White-flowered Centaury.*
*Lin. spec.* 1293. *Reich.* 3. 907. *Krock. silef. n.* 1466.
Rhaponticum. *Hall. helv. n.* 196.
Stoebe. *Baub. pin.* 273. 6.
*Calyxes scariose entire multinated; leaves pinnate-toothed, stem-leaves linear toothed at the base.*]

33. Centaurea splendens. *Shining Centaury.*
*Lin. spec.* 1293. *Reich.* 3. 907.
Rhaponticum. *Hall. helv. n.* 197.
Stoebe. *Baub. pin.* 273. *n.* 5. *Ger.* 590. *f.* 1.
*Calyxes scariose obtuse; radical leaves bipinnatifid, stem-leaves pinnated, teeth lanceolate.*

34. Centaurea Rhapontica. *Swiss Centaury.*
*Lin. spec.* 1294. *Reich.* 3. 907. *mant.* 478. *Villars dauph.* 3. 44. *Krock. silef. n.* 1467.
Centaurium. *Hall. helv. n.* 160. *Rai hist.* 331. 5. 6.
Rhaponticum. *Baub. pin.* 117. *n.* 4. *Lob. ic.* 288.
*Dod. pempt.* 389.
*Calyxes scariose; leaves ovate-oblong toothletted entire petioled, tomentose beneath.*

[35. Centaurea babylonica. *Babylonian Centaury.*
*Lin. fyst.* 787. *mant.* 460. *Reich.* 3. 908.
Serratula babylonica. *Lin. spec.* 1148. *Gouan. hort.* 421. *illustr.* 61.
Jacea. *Bauh. pin.* 272. *n.* 5. *prodr.* 129. *n.* 9.
*Calyxes scariose; leaves sublanceotate decurrent undivided, radical leaves lyrate.*]

36. Centaurea glastifolia. *Woad-leaved Centaury.*
*Lin. spec.* 1294. *Reich.* 3. 908. *hort. cliff.* 421. 8. *Gouan. illustr.* 73. *Curt. mag. t.* 62.
Centaurium. *Cama. rar. t.* 39.
*Calyxes scariose; leaves undivided quite entire decurrent.*

37. Centaurea conifera. *Cone Centaury.*
*Lin. spec.* 1294. *Reich.* 3. 909. *Gouan. hort.* 459. *fl.* 375. *Mill. fig. t.* 153. *D'Alfs. arag. n.* 867.
*Villars dauph.* 3. 45.
*Calyxes scariose; leaves tomentose, next the root lanceolate, on the stem pinnatifid, stem simple.*

**** Stoebæ: *with the spines of the calyx palmated.*

[38. Centaurea conchifolia. *Sensitive-leaved Centaury.*
*Lin. spec.* 1294. *Reich.* 3. 909. *mant.* 478. *hort. cliff.* 423. 22. *Cavill. ver. neap.* 24.
Jacea. *Baub. pin.* 272. 6. *prodr.* 128. 4. *Herm. lugdb.* 331. *act. t.* 675. *Pluk. t.* 39. *f.* 1.
*Calyxes palmate-spiny; leaves subdecurrent, spinulous repand-toothed.*

39. Centaurea seridis.
*Lin. spec.* 1294. *Reich.* 3. 909. *Gouan. hort.* 460.
Jacea. *Baub. pin.* 272. 5. *Rai hist.* 320. *Pluk. phyt. t.* 38. *f.* 1.
*Calyxes palmate-spiny; leaves decurrent tomentose oblong, the lowest sinuate-toothed.*]

40. Centaurea romana.
*Lin. spec.* 1295. *Reich.* 3. 910. *hort. cliff.* 423. *n.* 23.
Jacea. *Lin. hift.* 141. *t.* 42.
Cyanus. *Barr. rar. t.* 504.
*Calyxes palmate-spiny; leaves decurrent unarmed, radical leaves pinnatifid, the end lobe largeft.*

41. Centaurea cephalophala.
*Lin. spec.* 1295. *Reich.* 3. 910.
Jacea. *Herm. lugdb.* 332. *t. t.* 333. *Mor. hift.* 3. 143. *f.* 7. *t.* 27. *f.* 9.
*Calyxes palmate-spiny; leaves ovate-lanceolate petioled toothed.*

[42. Centaurea Ifnardi.
*Lin. spec.* 1295. *Reich.* 3. 910.
Calcitrapoides. *Ifn. act. par.* 1719. 164. *t.* 9.
*Calyxes palmate-spiny; leaves lyrate-toothed bifpid almoft ferru-chafping; flowers feffile terminal.*]

43. Centaurea napifolia. *Turnip-leaved Centaury.*
*Lin. spec.* 1295. *Reich.* 3. 910. *hort. upf.* 272.
Jacea. *Herm. par. t.* 189. (good). *Pluk. t.* 94. *f.* 2. *Mor.* 144. *f.* 7. *t.* 26. *f.* 20. loweft row.
*Calyxes palmate-fpiny; leaves decurrent finuate fpinulous, radical leaves lyrate.*

[44. Centaurea aspera. *Rough Centaury.*
*Lin. spec.* 1296. *fyst.* 787. *Reich.* 3. 911. *Ger. prov.* 186. 16. *Gouan. hort.* 460. *flor.* 376. *Villars dauph.* 3. 54.
Stoebe. *Baub. pin.* 273. 9. *Rai hist.* 319.
Jacea fpinofa. *Baub. hift.* 3. 33.
β. Carduus, &c. *Barr. rar.* 919.
*Calyxes palmate-three-fpined; leaves lanceolate-toothed.*]

***** Calcitrapæ: *with the fpines of the calyx compound.*

45. Centaurea benedicta. *Bleffed Thiftle.*
*Lin. spec.* 1296. *Reich.* 3. 911. *mat. med.* 192. *Blackw. t.* 476. *Woodv. med. bot.* 119. *t.* 42.
Cnicus. *Baub. pin.* 378.
Carduus benedictus. *Cam. epit.* 562. *Dod. pempt.* 725. *Baub. hift.* 3. 75. *f.* 2. *Rai hift.* 303. *Ger.* 1003. *f.* 2. *emac.* 1171. 2. *Park. parad.* 530.
*Calyxes double-fpiny woolly involucred; leaves femidecurrent toothletted-fpiny.*

46. Centaurea eriophora. *Woolly-headed Centaury.*
*Lin. spec.* 1296. *Reich.* 3. 911. *mant.* 478. *hort. upf.* 272.
*Calyxes double-fpiny woolly; leaves femidecurrent entire and finuate; ftem proliferous.*

[47. Centaurea ægyptiaca.
*Lin. fyst.* 787. *Reich.* 3. 912. *mant.* 118.
*Calyxes double-fpiny fometimes woolly; leaves feffile lanceolate entire and toothed; ftem proliferous.*

48. Centaurea Calcitrapa. *Star-thiftle.*
*Lin. spec.* 1297. *fyst.* 787. *Reich.* 3. 912. *hort. upf.* 273. *cliff.* 423. *mat. med.* 193. *Hudf.* 376. *With.* 946. *Ger. prov.* 189. 17. *Villars dauph.* 3. 54. *Pollich pal. n.* 828. *Krock. silef. n.* 1468.
Calcitrapa. *Hall. helv. n.* 194.
Rhaponticum Calcitrapa. *Scop. carn. n.* 1019.
Carduus ftellatus. *Baub. pin.* 387. *Baub. hift.* 3. 89. *Dod. pempt.* 733. *Rai hift.* 317. *Ger.* 1003. *t. emac.* 1166. *t. Park.* 988. *t. fig.* 989. *t.*
*Calyxes fubdouble-fpiny feffile; leaves pinnatifid linear toothed; ftem hairy.*

49. Centaurea Calcitrapoides. *Phœnician Centaury.*
*Lin. spec.* 1297. *Reich.* 3. 913. *amæn.* 4. 291. *Gouan. hort.* 461. *flor.* 377. *Villars dauph.* 3. 55. *n.* 17. β.
Card. ftell. fol. integris ferratis. *Magn. monf.* 293. *bot.* 44.
*Calyxes fubdouble-fpiny; leaves ftem-clafping lanceolate undivided ferrate.*

50. Centaurea solstitialis. *St. Barnaby's Thiftle.*
*Lin. spec.* 1297. *fyst.* 788. *Reich.* 3. 913. *hort. cliff.* 423. 21. *upf.* 272. *Scop. carn. n.* 1028. *Smith in Linn. transf.* 2. 236. *Ger. prov.* 189. 18. *Villars dauph.* 3. 56.
Calcitrapa. *Hall. helv. n.* 193.
Carduus solftitialis. *Ger. emac.* 1166. *f.* 2.
Card. ftell. luteus, fol. Cyani. *Baub. pin.* 387. *Rai hift.* 317. *n.* 4.—mitior apulus. *Col. ecphr.* 1. 30. *t.* 31. *Rai hift.* 317. *n.* 3? or 4?
Spina solftitialis. *Dod. pempt.* 734. *Baub. hift.* 3. 90.
*Calyxes double-fpiny ſolitary; branch-leaves decurrent unarmed lanceolate, radical-leaves lyrate-pinnatifid.*

51. Centaurea melitensis. *Cluſter-headed Centaury.*
*Lin. spec.* 1297. *Reich.* 3. 913. *Smith in Linn. transf.* 2. 236.
Jacea melit., capitulis conglobatis. *Bocc. fic.* 65. *t.* 35. *Mor. hift.* 3. 145. 28. *Rai hift.* 323.

*Calyxes double-spiny crowded terminal; leaves decurrent lanceolate sinuous unarmed.*

52. Centaurea ficula.
*Lin. spec.* 1298. *Reich.* 3. 914.
Jacea. *Magn. monsp.* 138. *Mor.* 144. *f.* 7. *t.* 28. *f.* 26. *Raii hist.* 321. *n.* 14.
*Calyxes ciliate-spiny terminal, leaves decurrent lyrate unarmed hoary.*

53. Centaurea centauroides.
*Lin. spec.* 1298. *Syst.* 788. *Reich.* 3. 914.
Jacea lutea, &c. *Bauh. pin.* 272. 2. *Col. ecphr.* 1. 33. *t.* 35. *Raii hist.* 318. *n.* 2.
*Calyxes ciliate-spiny, leaves lyrate-pinnate quite entire, the end division largest.*

54. Centaurea collina.
*Lin. spec.* 1298. *Reich.* 3. 914. *Gouan. monsp.* 461. *Scop. carn.* 2. *n.* 1029. *D'Asso. arag. n.* 872.
Jacea lutea, &c. *Bauh. pin.* 272. 3. *Clus. hist.* 2. 8. *Raii hist.* 318. *n.* 3.
*Calyxes ciliate unarmed spiny; radical leaves bipinnatifid; stem acutangled.*

55. Centaurea rupestris. *Rock Centaury.*
*Lin. spec.* 1298. *Reich.* 3. 914.
Jacea laciniata lutea. *Bauh. pin.* 272. *Col. ecphr.* 1. 36. *t.* 35. *f.* 2. *Raii hist.* 319. *n.* 4?
*Calyxes ciliate-spiny; leaves bipinnate linear.*

***** Crocodiloidea: *spines simple.*

56. Centaurea Verutum. *Dwarf Centaury.*
*Lin. spec.* 1299. *Reich.* 3. 915. *mant.* 478. *amæn.* 4. 292. *Gouan. illustr.* 73. *Jacqu. ic. collect.* 1. 90.
*Calyxes most simply spiny; teeth two opposite: leaves lanceolate entire decurrent.*

57. Centaurea salmantica. *Lyre-leaved Centaury.*
*Lin. spec.* 1299. *Reich.* 3. 915. *mant.* 478. *hort. cliff.* 421. 5. *Jacqu. hort. t.* 64. *Gouan. monsp.* 461. *D'Asso. arag. n.* 873. *Mor.* 143. *t.* 26. *f.* 14.
Stoebe. *Bauh. pin.* 273. 1. *Clus. hist.* 2. *t.* 9. *f.* 1. *Raii hist.* 324. 8.
*Calyxes smooth with a subspiny setule standing out; leaves lyrate-runcinate serrate.*

58. Centaurea cichoracea. *Succory-leaved Centaury.*
*Lin. spec.* 1299. *Reich.* 3. 915.
Jacea. *Raii suppl.* 203. *Till. pis. t.* 27.
*Calyxes setaceous-spiny; leaves decurrent undivided serrate-spiny.*

59. Centaurea muricata.
*Lin. spec.* 1299. *Reich.* 3. 916.
Jacea. *Bauh. pin.* 272. 4. *Mor. hist.* 3. 143. *n.* 18.
*Calyxes very simply spiny; lower leaves pinnatifid, upper lanceolate; peduncles very long.*

60. Centaurea peregrina.
*Lin. spec.* 1299. *Reich.* 3. 916.
Centaurium. *Boerh. lugdb.* 1. 144.
*Calyxes setaceous-spiny; leaves lanceolate petioled, toothed at bottom.*

[61. Centaurea radiata. *Rayed Centaury.*
*Lin. syst.* 788. *Reich.* 3. 916.
Xeranthemum crucifolium. *Lin. spec.* 1201. *Gmel. sib.* 2. 108. *t.* 47. *f.* 1.
*Calyxes almost unarmed and awned radiate; leaves pinnatifid.*

62. Centaurea nudicaulis. *Naked-stalked Centaury.*
*Lin. spec.* 1300. *Reich.* 3. 916. *Ger. prov.* 187. *n.* 11. *t.* 5. *D'Asso. arag. n.* 874.
Jacea. *Herm. par. t.* 190. *Barr. ic.* 1218. *Bocc. mus.* 2. 60. *t.* 48.
*Calyxes setaceous-spiny; leaves undivided, the upper ones a little toothed; stem almost naked one-flowered simple.*

63. Centaurea Crocodilium. *Bluish Centaury.*
*Lin. spec.* 1299. *Reich.* 3. 917.
Cyanus. *Barr. ic. t.* 503. (good.)
*Calyxes scarious very simply spiny; leaves pinnatifid quite entire, the outmost division larger toothed.*

64. Centaurea pumila. *Dwarf Centaury.*
*Lin. spec.* 1300. *Reich.* 3. 917. *amæn.* 4. 292.
*Calyxes very simply spiny; leaves tooth-pinnate villose; stem none.*

63. Centaurea tingitana. *Tangier Centaury.*
*Lin. spec.* 1300. *Reich.* 917.
Cyanus. *Hall. goett.* 370.
Cnicus. *Herm. lugdb. t.* 163.
*Calyxes spiny at the edge; leaves lanceolate undivided serrate-subspiny.*

66. Centaurea galactites. *White-veined Centaury.*
*Lin. spec.* 1300. *Reich.* 3. 917. *hort. cliff.* 424. *Gouan. monsp.* 461. *Bauh. hist.* 3. 54. *f.* 1.
Carduus tomentosus, &c. *Bauh. pin.* 382. 1. *Raii hist.* 313.
β. Card. creticus non maculatus, caule alato. *Tourn. cor.* 31.
*Calyxes setaceous spiny; leaves decurrent sinuate spiny tomentose beneath.*

*Species from other authors.*

**

67. Centaurea Triumfetti.
*Allion. pedem. n.* 579.
Cyanus alpinus major fol. incisis. *Triumf. obs.* 26.
*Calyxes serrate, with white ciliæ; leaves deeply pinnatifid with two pinnæ for the most part; decurrent.*

68. Centaurea Kartschiana.
*Scop. carn. n.* 1027. *t.* 55.
*Calyxes ciliate-spiny; leaves pinnate, pinnæ sessile, lanceolate, decurrent, ending in a point.*

69. Centaurea alata. *Upright wing-stalked Centaury.*
*Ait. hort. kew.* 3. 259. *Lamarck. encycl.* 1. 665.
C. semialata. *L'Herit. stirp. nov.* 2. *t.* 87.
*Calyxes ciliate, scales flat appressed ciliate at the end; stem-leaves oblong decurrent.*

70. Centaurea intybacea. *Succory-leaved Centaury.*
*Ait. hort. kew.* 3. 259. *Lamarck. encycl.* 1. 631.
*Calyxes ciliate, scales flat obsolete ciliate at the end; leaves pinnatifid; disk equal to the ray.*

71. Centaurea diluta. *Pale-flowered Centaury.*
*Ait. hort. kew.* 3. 261.
*Calyxes ciliate, scales acuminate somewhat thorny; leaves oblong and pinnatifid; florets of the ray longer than the disk.*

***

72. Centaurea strobilacea.
*Scop. insubr.* 38. *t.* 17.
*Calyxes scarious, spiny, serrate-ciliated; leaves dotted beneath, pinnated, pinnæ lanceolate, falcated, erect.*

****

73. Centaurea hybrida.
*Allion. pedem. n.* 593.
*Calyxes ciliated ending in a spine; leaves pinnated, branch-leaves linear-lanceolate undivided decurrent.*

74. Centaurea nicæensis.
*Allion. pedem. n.* 594. *t.* 74. *f.* 1.
*Calyxes ciliate-spiny, leaves ovate rough, radical leaves petioled toothed, stem-leaves embracing decurrent.*

*****

75. Centaurea cæspitosa.
*Cyril. rar. neap.* 241. *t.* 8.
*Calyxes palmate-spiny, leaves pinnate-toothed, the lower ones petioled, the upper ones half-stem-clasping.*

******

76. Centaurea elegans.
*Allion. pedem. n.* 599. *t.* 49. *f.* 1.
*Stem simple, leaves undivided linear, axillar one-flowered, and one terminal flower.*

77. Centaurea aurea. *Great Golden Centaury.*]
*Ait. hort. kew.* 3. 265.
*Calyxes most simply thorned, thorns spreading; floscules equal; leaves hirt, the lower pinnatifid.*

DISCRIPTIONS, *&c.*

1. Stem striated, three feet high, almost quite simple. Leaflets linear, scabrous, subciliate, very entire: the lowest recurved. Calyxes ovate, acute: the scales purple at the end, and very smooth. Florets in the disk three; in the ray five, quadrifid. Usually one or two seeds in a flower, crowned with a black down, so stiff as to make the seeds creep when held in the hand; hence the trivial name *Crepina*, from the Dutch *cruypen*, to creep. Receptacle chaffy, the chaffs ending in an awn[a].

Native of the South of France, Piedmont, Tuscany, and the Levant. Annual. Cultivated 1640[b].]

[a] Linn. spec. & syst. Gouan & Allioni. [b] Hort. kew.

2. The ſecond ſort is annual, and has been many years propagated in the Engliſh gardens, under the title of Sultan Flower, or Sweet Sultan. It was brought from the Levant, where it grows naturally in arable land among the corn. This ſends up a round channelled ſtalk near three feet high, which divides into many branches, with jagged leaves, of a pale green, ſmooth, and cloſe to the branches; from the ſide of the branches come out long naked pedunicles, each ſuſtaining a ſingle head of flowers, which have a very ſtrong odour, ſo as to be offenſive to many people, but to others very grateful: they are purple, white, or fleſh colour. There is alſo a variety with fiſtular flowers, and another with fringed flowers; but theſe degenerate in a few years, however carefully the ſeeds may be ſaved.

[Native of Perſia, and cultivated 1629[e]. It came to us firſt from Conſtantinople.

β. Differs from the common ſort in having the corollules of the ray large: but the habit of the plant ſhows that one took its riſe from the other[f].] The ſcales of the calyx are obtuſe; and the leaves laciniate and ſerrate. The flowers are of a bright colour, and have a very agreeable odour. It flowers in july and auguſt, and the ſeeds ripen in october.

[Rerzius, who examined the living plants, cannot diſcover any mark of difference between the red or *C. moſchata* and the yellow or *C. Auberbei*.

3. Root annual. Stem a foot high, furrowed, rough with hairs. Branches erect, many, from top to bottom. Leaves pinnatifid, rough, reſembling thoſe of *Siſymbr. Irio*; pinnules on each ſide about ſix, tooth-angular, the outmoſt and inmoſt ſhorter, but thoſe in the middle larger: upper leaves lanceolate, tooth-angular. Peduncles axillary and terminating, long, rough with hairs, having two or three flowers; frequently there are alſo two or three ſubſeſſile flowers, in a kind of head, at the end of the peduncles. Calyxes pubeſcent. Corolla bright purple[g].

4. This, according to Linnæus, bears ſome reſemblance to the Blue-bottle (n. 15.). Stem very branching. Leaves generally ſeſſile, ſeldom decurrent. Calyxes peduncled, ſcales imbricate with a ſcarioſe point at the end of each. Corollas purple, with a large ray. Florets of the ray nine to twelve, linear three or four-parted. Florets of the diſk as many.—Native of Egypt between Alexandria and Roſetta[h]. Cultivated in 1759, by Mr. Miller[i], who received the ſeeds from Juſſieu, and he had them from Dr. Lippi at Grand Cairo.

5. Root perennial, ſtriking deep into the ground, and ſending out a great number of long, ſmooth, pinnate leaves, of a glaucous hue. Stems near four feet high, dividing at top into many branches, having ſmall leaves on them of the ſame form with the lower. Each ſtem is terminated by a ſingle head of yellow flowers; which come out in june and july, and in dry ſeaſons perfect their ſeeds in autumn.

It grows naturally upon the Alps [in Italy; and was cultivated in 1640[k].]

6. This has a ſtrong perennial root like the foregoing ſort, and a great number of long pinnate leaves, of a lucid green, ſpreading wide on every ſide, proceed from it. The peduncles are ſlender, but very ſtiff, and divide at top into many ſmaller peduncles. Theſe, together with the ſtalks, riſe five or ſix feet high; having at each joint one ſmall pinnate leaf of the ſame form with the others. Each of the peduncles is terminated by a ſingle head of purple flowers, conſiderably longer than the calyx. They come out in july, and in very warm ſeaſons produce ripe ſeeds in England.

It grows naturally on the mountains of Italy, Spain [and Tartary; and was cultivated in 1596, by Gerarde[l].

This is ſuppoſed to be the *triſtia Centaurea* of Lucretius, and the *graveolentia Centaurea* of Virgil, recommended by the latter in diſorders of the Bees.

[e] Hort. kew. [f] Linn. [g] Gouan. [h] Linn. ſyſt. [i] Hort. kew. [k] Ibid. [l] Ibid.

7. Stem ſomewhat ſhrubby, upright, from eight or ten inches to a cubit in height, often branched, furrowed, hiſpid but not tomentoſe. Leaves hiſpid, thick, ovate-lanceolate, not acute at the baſe; the lowet and middle half-ſtem-claſping; ſharply toothed, ſome to the middle, others to the end; one tooth at the baſe larger than the reſt. The upper leaves reſemble theſe, but are leſs claſping; they are toothed or quite entire. The root-leaves are petioled. At the end of the ſtem and each branch a ſingle large flower, with a ſmall leaf or two at the baſe putting out cilias from the end reſembling the ſcales of the calyx; which are oblong, ſmooth, yelloviſh, ending in a brown lanceolate lamina twice or thrice as long as the ſcales themſelves, with many long rufous cilias on the edge, having the appearance of a little reflected feather. Corolla a fine red[m]. Native of Germany, Auſtria, Switzerland.

Haller has two varieties, one loftier in Germany, and the other about eighteen inches high, in the Swiſs alps. Cultivated 1727, by Mr. Miller[n].

8. Stem four or five feet high, angular, hard, branching. Root-leaves with four or five pairs of pinnas; ſtem-leaves ſimply pinnate; uppermoſt tongue-ſhaped, ſimple[o].

Native of Spain and Siberia.

9. A palm or foot in height. Stem ſtiff, altogether leafy, tomentoſe-hoary, ſlightly ſtriated. Leaves thickly tomentoſe, ſcarcely a quarter of an inch broad, an inch and half long, acuminate; the root-leaves ſharply toothed, teeth ſmall, diſtant; all the ſtem-leaves erect, neither ſtem-claſping nor decurrent, and ſcarcely toothed. Flower terminating, ſeſſile, in the midſt of from two to four leaves, the ſame ſize as in *C. nigra*. Corolla purple. Calyx as in *C. phrygia*; the lower hairs of the ſcales black, the upper whitiſh or pale yellow[p].

According to Linnæus, it is nearly allied to *C. phrygia*, and an alienated progeny of it. Haller ſays that it is lower than *C. phrygia*, but the head of flowers larger. Leaves very narrow lanceolate, quite entire, covered with a very white pile. Native of the South of Europe.

10. Stem a palm in height, often decumbent, branching from the bottom, furrowed-angular, rough with ſtiff hairs. Branches equal, diffuſed. Leaves entire, rugged, much crowded, ciliate with rigid hairs, near two inches in length, a line or a line and half in breadth, ending in a very ſharp point; thoſe next the root dilated at the baſe and half-ſtem-claſping; on the ſtem and branches ſeſſile. Flower the ſame ſize as in *C. phrygia*, protected with from three to ſix leaves, twice its length. Calyx at firſt pubeſcent, then ſmooth. Corollas purple. It varies with ſhorter thickiſh leaves, ſcarcely ciliate, and an almoſt ſimple erectiſh ſtem[q].

Native of Spain and Italy. Perennial.

11. Calyx as in *C. phrygia*, terminal, ſeſſile. Branches more divaricated. Leaves oblong, ſtem-claſping, the teeth towards the baſe larger. Floral leaves lanceolate, quite entire, pubeſcent[r]. Stems a ſhort ſpan in length and procumbent, tomentoſe, angular at the baſe, grooved at top, as are alſo the branches. Leaves ſhort, ſeſſile, lanceolate, cottony, with large deep diviſions. Pinnas linear. Scales of the calyx the upper half black, with white, capillary, feathered cilias. Corollets pale purple or white, all equal[s].—Native of Spain, South of France and Siberia.

12. Stem from two to three feet in height, angular, ſcored, ſlightly downy, often tinged with purple: branches alternate, the uppermoſt in this, as well as the *Scabioſa*, riſing above the ſtem, thickeſt towards the top, one-flowered. Leaves pinnatifid or toothed, ſometimes entire, lanceolate, ſeſſile, more or leſs downy, rough and hard. Outer ſcales of the calyx lanceolate, dark purple almoſt black, fringed with long cilias, and theſe hairy; the middle rows yellow, linear at the baſe, with a lanceolate fringed

[m] Gouan. Scop. Krock. [n] Hort. kew. [o] Hall. gott. [p] Gouan. [q] Ibid. [r] Linn. ſpec. [s] D'Alſo and Villars.

tip:

up: the inner scales whitish, smooth, shining, linear, terminated by a broad, roundish purple scale, ragged nor ciliate. Florets all alike, tube whitish, long, and narrow; border purple[1].

According to Linnæus, it differs from *C. phrygia*, in the ciliary scales being ovate, and from upright spreading, not recurved and subulate. It resembles *C. Jacea*, which has been confounded with it, but has no neutral ray. This however is not always the case: both Hudson and Stokes mention its having sometimes neutral florets in the ray. Long before them, Ray had affirmed this variety to be no less frequent than the common sort in the west of England: and Dillenius afterwards observed it near Oxford. Nay Thomas Willifell showed Ray plants which had the flowers wholly composed of neutral florets. It varies also with white flowers; and with leaves entire, or jagged.

Dillenius observes, that Parkinson's figure only agrees with our English plant[2].

It has many provincial names, as Knap-weed, Knop-weed, Knob-weed, Horse-knops; all from Knob or Nob, a head. Also Hard-heads, Hard-irons and Matfellon. In Scotland, Horse-knot.

It is found in Germany, Austria, France, &c. With us in England it is a bad weed in meadows and pastures; being a harsh flubborn plant, seldom touched by cattle either green or in hay, and being with difficulty extirpated. Linnæus marks it as biennial, but our plant is perennial, and increases much by the root.

13. Calyx surrounded with sessile leaves, and among these scales of the calyx linear-lanceolate with a black edge, and ciliate at top with yellow bristles. Leaves on the stem often lyrate. Corolla purplish with a large ray. It is a low plant[3].—Native of the South of France, Spain, and the Levant. Mr. Miller says the seeds were sent him from Portugal, by Robert Moore, Esq. and that it is biennial: the bottom-leaves oblong-oval, (rather lanceolate and toothed here and there, resembling those of *Arabis alpina*) but those which come out afterwards divided. Stalks upwards of two feet high, with long narrow pointed leaves, indented on their edges, and frequently growing in clusters: branches several, with leaves of the same shape, but smaller, each terminated by a single head of purple flowers, with barren florets in the ray. The scales of the calyx are edged with long hairs which turn downwards; and under it is a whorl of long leaves. It flowers in june and july, and the seeds ripen in the autumn[4].

14. Root perennial, running deep into the ground. Stem commonly single, upright, one-flowered; sometimes, especially in a cultivated state, it puts forth a branch or two. Leaves quite entire, tomentose. Flower large and specious. Calycine scales ovate, whitish, with black ciliæ round their edges. Corollets in the ray very long, blue with a white tube, neuter: in the disk short, purple, fertile.

Scopoli, who mentions several varieties, describes the leaves on the stem as far as sixteen, with one flower at the end. Florets in the ray twelve or thirteen, cut into segments from four to six. Fertile florets as far as thirty-six; filaments bearded, but smooth at the base, with a tooth on each side; receptacle subpalaceous; the chaffs a little villose at top. On high mountains it is sometimes not more than two inches in height, very tomentose, the leaves longer than the stem, and a red flower. It is also found with two flowers on a stem, and as far as nineteen florets in the ray.

Native of the South of Europe. I found it on mount Grimdelwald. Ray observed it about Spa, and on mount Jura, not far from Geneva: but it is common on many parts of the continent. It was cultivated in 1596, by Gerarde[5]; and flowers in may and june: it is commonly called Perennial Blue Bottle, and by some Batchelor's Button.

[Haller records varieties with a white flower, and with gashed leaves, besides n. 7. of Miller, differing, as he observes, in having much longer and narrower leaves, which are not so white, the heads of flowers are also smaller; but whether this be only a variety, I cannot determine, having never raised either from seeds; for these plants spread very much by their creeping roots, which renders them barren, as is frequently the case with many other creeping rooted plants: however, this plant has always retained its difference from the year 1727, when I first brought it to England; and as it propagates so fast, it is now become almost as common in the gardens, as the broad leaved sort, and is equally hardy.

[According to Linnæus this variety differs from the common sort, in having smaller leaves, less decurrent at the base, and not running down to the next leaf below. See n. 6.

15. Stem one to two feet high, angular, slightly tomentose, branched at top. Leaves numerous, white underneath, with three parallel ribs. Branches one-flowered. Scales of the calyx lanceolate, the outer ones green tinged with purple, tomentose, sharply serrate; the inner ones entire. Florets of the ray, with lanceolate irregular pointed segments, (six to eight) barren. Egret short, sessile, bristly[6].

Haller remarks that the root-leaves are toothed or even pinnatifid, with the extreme segment very large: and that the barren florets (nine) are very wide, two-lipped; divisions four or five at top, two or three at bottom. And Scopoli, that the filaments below the anther are furrounded with a villose ring; and the style beneath the stigma bearded.

It is a common weed among corn, flowering from june to auguft. The wild flower is ufually blue, but fometimes white or purple.

Our old Englifh writers, befides *Blue-bottle*, which has commonly obtained, have the names of *Blue-hall*, *Blue-blow*, *Corn-flower*, and *Hurt-ſickle*. In the booke of Husbandrye afcribed to Fitzherbert, it ſeems to be called *Hasdt* or *Hardot*[7]. Some modern agriculturiſts ſpeak of it under the name of *Bauble*, which is evidently nothing more than a corruption of Bottle. Dr. Stokes informs us, that it is called *Batchelor's-buttons* in Yorkſhire and Derbyſhire: but this is a name given to many other flowers. In Scotland it is called *Blue Bonnets*[8].

In German, Dutch, Swediſh and Daniſh *Korn-blumen*: in French *Bluet*: in Italian and Portuguese *Cianos*: in Spaniſh *Acianos*, *Azahres*.

The expreſſed juice of the neutral florets makes a good ink: it alſo ſtains linen of a beautiful blue, but the colour is not permanent in any mode hitherto uſed. Mr. Boyle ſays that the juice of the central florets, with the addition of a very ſmall quantity of alum, makes a laſting tranſparent blue, not inferior to ultramarine[9].

16. Stem almoſt woody, ſtiff, ſtriated, or angular, whitiſh, branched, from a foot to eighteen inches and two feet in height. Leaves many, dry, hard, ſmooth or tomentoſe, bipinnate; pinnas ſlender, narrow, lanceolate, with a few teeth: upper leaves ſimple, linear. Many ſmall flowers terminate the branches. Calyx ſwelling at bottom, contracted at top; ſcales triangular, black at the end, ſurrounded with hard white ciliæ. Florets ſtellicoloured or pale purple[10].—Native of the South of France, Switzerland, Germany, Auſtria, Carniola, Italy, Spain. Annual.—Cultivated 1640[11].

There is a variety with larger flowers, the ſize of thoſe in *C. Jacea*: the leaves hoary, and differing ſomewhat in its appearance[12].

17. The whole plant is tomentoſe: the ſmall branches terminate in ſtiff thorns, and the calyx is very ſlightly ciliate[13].—Native of the iſland of Candia. Introduced 1788, by John Sibthorp, M. D.[14]

[1] Woodv. Mif. [2] Raii Syn. [3] Linn. ſpec.
[4] Miller's figure. [5] Hort. kew.
[6] Woodv. Mif. [7] Fol. 14. edit. 1562.
[8] Gentl. magaz. for 1748. See Withering and Lightfoot.
[9] Haller. [10] Hort. kew. from Emſ. [11] Linn. ſpec.
[12] Linnæus fil. [13] Hort. kew.

18. Leaves white as it were pappous, pinnated with rounded lobes. Flower solitary, pedunculed. Ray small with long ſtyles. Calyx large, with acute, ciliated, yellowiſh ſcales [2]. It ſeldom riſes more than three feet high in this country, with a perennial ſtalk dividing into many branches. The flowers, which are produced from theſe, on ſhort pedunculs, are of a bright yellow. They appear in june and july, but the ſeeds ſeldom ripen in England. As this plant retains its leaves, which are extremely white, all the year, it makes a pretty variety in a garden. Native of the iſland of Candia, and of ſeveral places on the coaſts of the Mediterranean, both in Europe and Africa.

[Cultivated 1714, by the Dutcheſs of Beaufort [3].]

19. Stems near three feet high, branching, from a perennial root. [Leaves white as it were pappous; ſtem-leaves bipinnate, with gaſhed, acute lobes, the outmoſt palmated: branch-leaves pinnatifid. Cilias of the calyx brown. Flower purple with white ſtyles; ray ſcarcely longer than the reſt of the corolla [4].]

Theſe come out in june, and in favourable ſeaſons the ſeeds are perfected in autumn. It retains its leaves through the year. This grows naturally in Italy, on the borders of the fields.—[Cultivated 1731, by Mr. Miller [5].

β. On monte Circello.

20. Stem next the root very tomentoſe. Radical leaves alſo cloſely tomentoſe: leaflets nearly equal, oval, with a ſmall lobe only on the lower ſide of the baſe. Stem-leaves ſimple, wedge-form, with a ſmall tooth at the baſe on one ſide. Flowers yellow. Leaves white, as in the laſt ſpecies. [6] Native of Candia or Crete. Perennial, flowering in july.—Cultivated 1768, by Mr. Miller [7].

21. Leaves tomentoſe, lanceolate, moſt of the radical ones pinnatifid; the lobes turned upward, lanceolate, quite entire, decurrent, the outmoſt larger. Stem-leaves moſtly ſix or ſeven, the upper ones undivided. Stem quite ſimple, ſometimes, but rarely, having one ſmall branch, pubeſcent, ſomewhat grooved. Uſually one flower. Calyx ſwelling: leaflets augmented with an ovate ſcaleſet, the ſize of a leaflet of the calyx; they are ſharply ciliate and pale. Corolla purple, ſometimes fleſh-coloured, with a large barren ray. Found in Siberia by Gmelin [8].—Introduced 1782, by Mr. John Buſh [9].

22. Stem round, pubeſcent, gray at bottom. Leaves pubeſcent, ſoft; the lower haſtate. Stipules lanceolate, toward the ſtem generally ſickle-form. Peduncles growing thick at the top. Cilias of the calyx gray. Flowers floſculous. The leaves have an elongated tooth at the baſe; whence the ſtem is as it were furniſhed with ſtipules [10].

It is a perennial plant, and the leaves continue in verdure through the year, for which it is chiefly valued, for the flower has little more beauty than the common Knapweed. It flowers in june and july, and in warm ſeaſons the ſeeds ripen in ſeptember. It grows naturally in Spain and Portugal; and was cultivated 1683, by Mr. James Sutherland [11].

23. Stem nearly cylindric, upright, alternately branched, leafy, ſtriated, two feet high. Leaves rough-ſh, and ſlightly hairy. Root-leaves on long petioles, with a winged midrib; pinnas ovate, toothed, frequently with pinnatifid appendages at the baſe: the terminating pinna very large, confluent with the next pair. Stem-leaves alſo pinnatifid, with confluent pinnas moſtly entire. Flowers ſolitary, terminating. Calyx bellying, globular, cloſely imbricate, ſcales triangular, acute, and ciliate or rather pectinate at the edge, tipt and edged with black, almoſt ſmooth. Florets of the ray barren, reddiſh purple, ſtriated, deeply divided into four, ſometimes five linear ſegments: thoſe of the diſk deeply divided into five linear purple ſegments, and marked on the outſide with five dark purple lines. Seeds oval, brown, compreſſed, ſhining, viewed with a glaſs ſlightly hairy: crowned with a ſeſſile, yellowiſh, briſtly egret, as long as the ſeed [12].

It varies frequently with white flowers; Haller mentions ſeveral other variations in the colour, as fleſh-coloured, variegated with that and white, pale yellow and full yellow. Native of moſt countries of Europe, except the very ſouthern parts, in meadows, on the borders of corn-fields, among corn, and by road ſides. Perennial, flowering in july and auguſt. Called in Yorkſhire Great Horſe-knobs.

24. It has altogether the flower and calyx of *C. Scabioſa*. The firſt leaves are broad-lanceolate, undivided, quite entire; the reſt are pinnatifid, the diviſions abſolutely without lobes. Native of Siberia. Perennial [13].

25. Root perennial. Stems near three feet high, branched, with a ſingle leaf at each joint. Flowers ſolitary, terminating. They appear in june, and the ſeeds ripen in auguſt.

[26. The flower is yellow. Cilias of the ſcales white. The root is ſweet and eſculent. It is called *Tuffa* by the Arabs [14].]

27. The ſtems riſe near five feet high, dividing at top into many ſmaller branches. Flowers ſolitary, terminating, yellow. They come out from june to auguſt, and the ſeeds ripen in autumn.

[It differs from *C. Scabioſa*, which it reſembles very much, not only in the corolla being of a brimſtone colour, but particularly in the calyx, the leaflets of which are terminated by an ovate, ferruginous, ciliate ſcale, with pectinated cilias, the length of the ſcale itſelf; whereas in *C. Scabioſa* the edge of the leaves of the calyx is black and ciliate-torn, not lengthened out into a ſcale [15].—Native of Siberia. It was cultivated in 1759, by Mr. Miller [16], to whom the ſeeds were ſent from Peterſburgh.

28. Leaves large, like thoſe of Docks, ſharp, and ſtiff like Pear leaves, with two pairs of ſmaller ones at the baſe, which make them lyrate. Stems eighteen inches high. Flowers oblong, yellow.

At the foot of Mount Libanus in ſhady watery places [17].

29. Stem angular, branched, even. Leaves attenuated at the baſe, of an even ſurface but rugged about the edge. Peduncles filiform, the length of the leaves, naked. Scales of the calyx acute, quite entire.—Native of the Levant. Perennial.

30. Lower leaves pinnatifid, with one, two or three pairs of lobes, the laſt lobe very large with a few teeth: upper leaves elliptic, lanceolate, and even linear: all of them dry, nerved, hirſute and whitiſh, moſt ſo in warmer climates. Stem from two to eighteen inches in height, (ſometimes, according to others, attaining the human ſtature) little branched, with a large flower terminating each branch. Upper part of the ſcales of the calyx brown or whitiſh, ſhining, dry. Florets of the ray long, two-lipped, the two inner diviſions erect, the three lower pendulous: colour bright purple. Florets of the diſk unequally cut. Down on the receptacle much, on the ſeeds very little [18]. Linnæus ſays none. Leers affirms that it conſiſts of a few very ſhort briſtles, which ſoon fall off.

According to Scopoli, the branches are angular, leafy. One leaf below the calyx, the ſcales of which are terminated by a brown, lacerated, ciliate lamina. He makes two varieties, 1. with the lower leaves pinnatifid at the baſe, the upper ones entire. This has the ſtature of *C. Scabioſa*; ſcarce any nap on the leaves; the lamina of the ſcales brown, with a ferruginous edge.—2. With all the leaves entire, and looſely toothed. This is more tomentoſe; the ſcales of the calyx are yellowiſh and terminated by a brown ciliate lamina. It is very like *C. nigra* [19]. Villars ſays that it varies very much; in general the leaves are hard and villoſe, more or leſs white.

[1] Linn. ſpec. [2] Hort. kew. [3] Linn. ſpec. [4] Hort. kew. [5] Linn. [6] Hort. kew. [7] Linn. ſpec. [8] Hort. kew. [9] Linn. ſpec. & ſuft. [10] Hort. kew. [11] Woodw. Mſs. & Withering. [12] Linn. ſuppl. [13] Shaw. [14] Linn. ſpec. [15] Hort. kew. [16] Gronovius. [17] Haller. [18] Scop. carn.

and more or less toothed at the base; the stems are hard, angular, terminated by one or more flowers; the scales of the calyx are membranous and dry, often white, and a little torn at the end.

The first variety has the root-leaves pinnatifid and much toothed, more white, and the stem many-flowered, as described by Haller, Scopoli, &c.

The second is straight and green, the leaves lanceolate and entire. It grows in moist mountainous pastures.

The third is low, creeping and one-flowered. It is the *C. amara* of Linnæus, and grows in dry places.

The fourth is like it, but is a little higher, cottony and more white. Well figured by Ambrosini, phytogr. 295.

The fifth has very narrow, very white and toothed leaves; the calyx is whiter and only half the size, the scales are drier and russet-coloured. Perhaps *Rhaponticum eriophorum* of Scopoli, and approaches to *C. alba* of Linnæus. It often varies, like many other of the species, with a white flower.—Native of the North of Europe, and of the South of France, &c. Perennial. Cultivated 1748, by Mr. Miller [a].

31. Stems two or three from the same root, divaricate, decumbent or erect, stiffish, very simple, one-flowered, tomentose-hoary, angular. Root-leaves tomentose, mucronate, petioled, lanceolate, entire, toothed and pinnatifid: all the stem-leaves sessile, usually falcate, linear, quite entire. Flower of *C. Jacea*, but only half the size: scales from ferruginous becoming whitish, the edge membranous, scarious, torn, whitish.

There is a variety of *C. Jacea*, which much resembles this, and which gave Gerard *(in Fl. gallopr.)* occasion to suppose that the *amara* is nothing more than a variety of the *Jacea*: it may be distinguished however by its branching stem, and its three-nerved half-stem-clasping leaves, which are generally hastate and have one tooth at the base [b].

32. Very nearly allied to *C. Jacea*. Stem panicled. Leaves acuminate, the upper ones only toothed, the uppermost quite simple. Calyxes terminal, ovate, small; scales membranaceous, loose, mucronate, snow-white [c].

Haller seems to look upon this as not specifically different from *C. Jacea*, though he sets it down as a distinct species.—Native of Spain and Switzerland.

Introduced 1773, by Monsr. Richard [d].

33. Stems three feet high, angular, hard, smooth, branched, many-flowered. Leaves minutely divided, smooth or slightly tomentose. Flowers purple, with a beautiful silvery calyx, consisting of dry, round scales ending in a harmless awn [e]. Biennial, flowering in july: the seeds ripen in september. [In transalpine Switzerland, Spain, Siberia.—Cultivated 1597, by Gerard [f].

34. This is a handsome plant. The root is thick, round, black, wrinkled and irregular, strikes deep in the ground, and when dry is aromatic. Radical leaves many, having a white nap underneath, on long petioles, subcordate, shaped like those of the docks, (or Elecampane). Stem eighteen inches high, (sometimes three or four feet). Stem-leaves few, on short petioles, sometimes pinnatifid. Flower solitary, large. Floscules purple, very numerous, without any neuters [g].

Switzerland and about Verona, whence Mr. Miller received the seeds.—Cultivated 1656, by Mr. John Tradescant, jun [h]. It flowers in july.

The roots of this, and several of the species allied to it, are bitter and astringent, and formerly were much given in cases wherein we now give Jesuit's bark. The plants also will dye yellow.

35. It seems very nearly allied to *C. glastifolia*. Branches angular. Radical leaves lanceolate-ovate, with a few small teeth, having frequently two teeth at the base, roughish, petioled, the size of those of

[a] Hort. kew. [b] Gouan. [c] Linn. spec. [d] Hort. kew. [e] Haller. [f] Hort. kew. [g] Haller. [h] Hort. kew.

Deadly Night-shade (Atropa Belladonna.) Stem-leaves lanceolate, decurrent (as in *C. glastifolia*). Calyx slightly scarious. Corolla yellow. Flowers in a thyrse subsessile, the pedicels four-flowered or thereabouts. Native of the Levant. Perennial [a]. Cultivated 1748, by Mr. Miller: dict. edit. 5. Jacea 14 [b].

36. Root perennial, striking deep into the ground; from this springs a great tuft of long entire leaves, shaped like those of Woad, growing upright, with many upright stalks, near five feet high, having a single leaf at each joint, of the same shape, but smaller and decurrent; and dividing at top into two or three branches, each terminated by a single head of yellow flowers, in a silvery calyx.

[The ray is less than the disk [c].—The leaves have veins prominent on both their sides [d]. Native of the Levant and Siberia.

Cultivated 1731 by Mr. Miller. Flowering from june to august [e], but rarely producing good seeds in England.

37. Root perennial, single, sending out in the spring several entire leaves, and afterwards a single stalk, more than a foot high, having one divided hoary leaf at each joint; at the top comes out a single, large, scaly head, shaped like a Pine cone, very taper at the top, where it closely surrounds the florets, which just emerge from the calyx, are of a bright purple colour, and appear in june. [Scarcely a palm high, tomentose. Root-leaves quite entire. Calycine scales shining, pellucid, the upper ones purplish [f].

Native of the South of Europe. Cultivated 1757, by Mr. Miller [g]; who received the seeds from Verona.

[38. Lower leaves petioled, undivided, lanceolate-ovate; the upper ones sessile, toothed towards the base: the upper ones subdecurrent, lanceolate. Stem simple, angular. Branch longer than the stem. Flower solitary, large, often bending the stem to the ground. Calyx ovate, green with yellowish spines, the middle one longest, generally recurved. Ray five-cleft, larger, purple: disk whitish, purplish at top. On the coast of the Mediterranean [h]. Introduced about 1780, by Monsr. Thouin [i].

39. A tomentose plant, hardly a foot high, with the stems branching a little. Leaves broad-lanceolate, with the serratures somewhat spiny. Calyxes terminal, ovate; the scales palmate at the end with nine or more setaceous spines. Ray of the flower purple, disk whitish with few flowers. Native of Spain. Perennial [k].

40. Root biennial. Stems three feet in height. Flowers large, red; the calyxes strongly armed with spines. It flowers in july, and the seeds ripen in september. It is a native of the Campania of Rome.

41. Root annual. Leaves woolly. The stem rises two feet high, dividing at top into three or four branches, which are terminated by pretty large heads of flowers, with woolly calyxes strongly armed with spines. It flowers in july, and in warm seasons sometimes ripens the seeds in september. Native of Spain and Barbary. This, and the foregoing sort, were cultivated by Mr. Miller in 1768.

[42. Root perennial. Stems several, ascending, about a foot in length, commonly square, hairy, furrowed; the angles reddish brown. Lower leaves four or five inches long, resembling those of Succory; the other leaves of the same form, but smaller and less divided as they are higher on the stem or branches; those immediately under the flower (from four to seven), an inch long, either entire or having only a few teeth. The flowers are purple, solitary, and appear in june and july: they are composed of from forty to forty-five regular florets in the disk, and fifteen to eighteen neuter florets in the ray, comprised in a conic calyx.—Cultivated in 1717, in the royal garden at Paris: the seeds came from Holland [l].

[a] Linn. mant. [b] Hort. kew. [c] Linn. [d] Curt. magaz. [e] Hort. kew. [f] Gouan. [g] Hort. kew. [h] Linn. spec. & mant. [i] Hort. kew. [k] Linn. syst. [l] Guard.

Perhaps this is only a variety of *C. pullata* (n. 13.), or a hybridous offspring of it [a].]

43. Root annual. Stem branching, three feet high. Lower leaves not much unlike thoſe of the Turnep, rounded at the end, and the baſe cut into many ſegments, diminiſhing gradually to the top of the ſtem and winged. Flowers terminating.

[Corolla radiate purple; the neuters five-cleft, the two inner diviſions of the calyx ſmaller than the others [b]. Native of the Archipelago.—Cultivated 1759, by Mr. Miller [c].

44. The winged ſtems, dark-coloured though villoſe leaves, and buſhy habit of the plant, diſtinguiſh this from all others. Spines of the calyx three or five fold. About Montpellier, in Tuſcany and Portugal [d].—Introduced 1772, by Monſ. Richard [e].

45. Root annual. Stem erect, roundiſh, channelled, rough, from one to two feet high, often branched towards the top. Leaves long, elliptical, rough, runcinate or variouſly ſerrate, and barbed with ſharp points, bright green above, underneath whitiſh and reticulated; upper ones ſeſſile, and on one ſide extending along the ſtem, but the lower ones petioled. Flowers incloſed in an involucre of ten leaves, of which the five outer are larger: calyx oval, woolly; ſcales terminated by rigid, pinnate, ſpinous points: florets yellow; thoſe of the ray ſmall and triſid. Seeds oblong, brown, ſtriated, bent, with a hairy down ſimilar to that of the receptacle. Native of Spain and the Levant; flowering from june to ſeptember.

Cultivated in 1597, as appears from Gerarde.

This plant obtained the appellation of *benedictus* from its being ſuppoſed to poſſeſs extraordinary medical powers; for excluſive of thoſe qualities uſually aſcribed to bitters, it was thought to be a powerful alexipharmic, and capable of curing the plague, and other malignant febrile diſorders. It was alſo reputed to be good againſt worms, as well as againſt all ſorts of poiſon. Simon Paulli declares that it has no equal in conſolidating putrid and ſtubborn ulcers, and even cancers. He relates the caſe of a woman whoſe breaſts were waſted by a cancer to the very ribs, and yet was cured by waſhing them with the diſtilled water of this plant, and ſprinkling them with the powder of its leaves: and Arnoldus de Villa nova relates that he ſaw the putrid and hollow ulcers of a man, who had all the fleſh of his legs conſumed to the very bone, and who had tried all other medicines in vain, cured by the following receipt: Take the bruiſed leaves of this plant, and boil them with ſome generous wine; then add ſome melted hog's lard; let them boil a little more, and then put in ſome wheat-flour, ſtirring it about all the while with a ſpatula, till it comes to the conſiſtence of an ointment. Lay this warm on the ulcers twice a day.

In ſpite however of all theſe high commendations, we do not find this plant conſidered as of any great importance in the modern materia medica. In loſs of appetite however, where the ſtomach has been injured by irregularities, it is allowed that the good effects of the infuſion of Card. benedictus have been often experienced. The decoction of it alſo in water or poſſet-drink ſtill maintains its popular reputation as a gentle vomit, for which purpoſe it is to be drank in pretty large quantities.

46. Stem proliferous. Leaves unarmed; thoſe next the root lanceolate, on the ſtem laciniated, on the branches linear. Calyx large, much interwoven with wool. Corolla ſmall, yellow. Neuter florets quadrifid ſhorter than the hermaphrodites. Native of Portugal. Flowering in july [f].—Cultivated 1768, by Mr. Miller [g].

47. Stem a foot high, diffuſed, proliferous-branched, ſpreading. Branches from the axillas of the upper leaves, alternate, terminated by a flower. Leaves alternate, ſeſſile or half-ſtem-claſping, ſubſcabrous; the loweſt pinnatifid, the middle lyrate, the upper lanceolate. Flowers ſubſeſſile, of a middling ſize. Calyx ovate, ſomewhat woolly with a thin pile; the ſcales having a ſlender, purpliſh ſpine, with two briſtly ſpinules on each ſide at the baſe. Corolla white: florets of the ray leſs, quadrifid. Anthers yellow, reddiſh at the tip. Native of Egypt. Annual [h].

48. Root annual. Stem from a foot to eighteen inches and two feet in height, hairy, ſight green, very much branched, with thorns or prickles: branches alternate, ſpreading. Leaves alternate, half-ſtem-claſping, ſoft, unarmed, ſmooth or very ſlightly pubeſcent. The ſcales of the calyx end in long white ſpines, diverging like the points of a ſtar, very ſharp, convex on the outſide, and channelled within, at the baſe next the calyx armed with a pair or two of ſhorter ſpines. Corollets uſually purple, ſometimes white. The flowers are axillary and ſeſſile. Seeds naked. Receptacle villoſe [i]. Native of England, Switzerland, and the ſouthern parts of Europe.

Linnæus (hort. cliff.) affirms that it grows abundantly about London, and in the very city itſelf. I have never found it there; it is extremely common about Cambridge, and is ſaid to have been uſed by the brewers inſtead of hops. The plant and root are both very bitter, and are ſometimes adminiſtered abroad in agues, &c.

49. The whole plant reſembles *C. Calcitrapa*, but the ſtem and leaves are leſs hirſute: the leaves are very finely ſerrate, acuminate, ſtem-claſping. Calyxes axillary, ſeſſile, like thoſe of C. C., but lanuginous at the baſe [k].

Monſ. Villars is of opinion, that it ſcarcely deſerves to be reckoned a diſtinct ſpecies.

Linnæus calls it the daughter of the foregoing, but with undivided leaves. Near Niſmes, and in Paleſtine [l].—Cultivated 1683, by Mr. James Sutherland [m].

50. Radical leaves lyrate, acuminate. Flowers terminal, ſolitary. Peduncles very long, leafy: no leaflet at the calyx. Spines of the calyx white, longer under the calyx, toothed only at the baſe [n]. It may be diſtinguiſhed from *melitenſis*, by having the lobes of the leaves acute, eſpecially the terminating one, which is perfectly deltoid. Each ſcale of the calyx ends in a very ſtrong pale-yellow ſpine, half an inch in length, accompanied by ſeveral ſmaller ones. *C. melitenſis* on the contrary has all the lobes of the leaves rounded, the end one remarkably ſo, and perfectly blunt, even retuſe. Calyx fringed with ſmall brownith ſpines, of which the longeſt is not above one third of the length of thoſe in *C. ſolſtitialis*. Both have bright yellow flowers [o]. Annual. South of Europe.

Diſcovered by Mr. Crowe, in a graſſy field at Arminghall, two miles from Norwich.

51. Radical leaves lyrate, obtuſe. Flowers two or three together, on very ſhort peduncles. Spines not longer than the calyx, toothed above the baſe. One leaf or two to each calyx, the length of the calyx itſelf. About Montpellier, and in the iſle of Malta. Annual [p].—Cultivated 1739, by Mr. Miller [q].

What we commonly call the *ſolſtitialis* is this ſort.

52. Radical leaves lyrate, obtuſe, toothleted, ſcabrous, ſtem-leaves lanceolate, decurrent. Calyxes large ovate; the ſcales having a large brown ſpine. Native of Sicily. Perennial [r].

53. Scales of the calyx ciliate, with a ſpine at the end; but the inner ſcales icarioſe, ſpineleſs. Native of Italy, Spain, and Montpellier.

54. Stem ſcabrous, angular. Bottom leaves twice, upper once pinnate, with linear pinnæ. Calyxes rounded at the baſe, yellowiſh green; ciliæ ferruginous. Florets yellow. Seeds villoſe. Down compoſed of unequal briſtles, twice as long as the ſeed. *Scopoli* mentions ſeveral varieties.

[a] Linn. ſpec. [b] Ibid. [c] Hort. kew.
[d] Linn. [e] Hort. kew. [f] Linn.
[g] Hort. kew. [h] Linn. mant. [i] Pollich. [k] Linn. amœn.
[l] Linn. [m] Hort. kew. [n] Linn. [o] Smith.
[p] Linn. ſpec. [q] Hort. kew. [r] Linn. ſpec.

D'Aſſo

D'Allo obſerves, that the diviſions of the leaves end in a harmleſs ſpine; and that the neuter florets in the ray are quadrifid. Native of Montpellier, Spain, Carniola, Italy, Meſſina. Perennial.

55. This is allied to the foregoing ſpecies in having the ſcales of the calyx brown ciliate, terminated by a weak, ſimple ſpine, ſhorter than the ſcale itſelf; but the innoſt ſcales are ſcarioſe. The ſtem is little branched, and ſcarcely angular. Almoſt all the leaves are bipinnate, linear, and except about the edge even; but by no means lanceolate, with the pinnas branched like a ſtag's horn. Native of Italy. Perennial [1].

56. Root annual. Stem erect, eighteen inches high and upwards, angular, having axillary branches, uſually ſimple and one-flowered. Leaves ſomewhat ſcabrous; the loweſt on the ſtem pinnatifid, (lyrate, *Linn.*) all the reſt ſimple, narrow lanceolate, quite entire. Flowers ſolitary, terminating. Calyxes round-ovate, tomentoſe; ſpines long, ſtout, ſubulate, ſpreading, ſtraw-coloured, emitting erectiſh nearly oppoſite ſpinules about the middle, and ſometimes one or two ſimilar ones. Corolla yellow. Seeds oblong, ſhining, cinereous.—Native of Paleſtine [2]. Introduced 1780, by Mr. William Hudſon [3].

57. Stem panicled, with the branches rather ſimple. Flowers terminal. Radical leaves lanceolate, ſerrate, rough with hairs, the ſerratures mucronate; ſtem-leaves runcinate, hiſpid-ſcabrous, the ſerratures ſubſpiny. Calyxes very ſmooth, ovate. Spines of the calyx ſo ſmall as to be ſcarcely apparent. Corollas white or purple: the males four-parted, not larger than the others.—Native of the South of Europe. Perennial [4]. Cultivated 1596, by Gerarde [5].

58. Radical leaves a ſhort ſpan in length, three or four inches over in the wideſt part, entire, with only a few irregular toothlets or ſmall ſpines. Stem-leaves ſmaller, narrower, with toothlets or ſhort ſpinules round the edge, acuminate. Stem clothed to the top with leaves, and terminated by a ſmall head, the ſcales of which finiſh in oblong, recurved ſpinules [6]. Native of Italy, in monte Argentario.

59. Stems tender, dividing into many branches, with very ſmall leaves on them. Lower leaves divided into five or ſeven lobes. Spines of the calyx ſmall. Florets purple. Native of Spain. Annual [7].]

60. The lower leaves ſpread flat on the ground, they are ſoft, hairy, and end in ſharp points, but towards the baſe are cut into ſeveral narrow ſegments. The ſtems riſe near three feet high, with entire leaves at each joint; they are terminated by ſingle large heads of flowers, of a gold colour, incloſed in a prickly calyx; appearing in july and auguſt, but never producing ſeeds in this country. It grows naturally in Auſtria and Hungary, from both which countries Mr. Miller received the ſeeds before 1759.

[61. Calyx narrow with the inner ſcales longer [1]. Native of Siberia.

62. The firſt leaves obovate, quite entire; the reſt ovate-lanceolate, toothed at the baſe. Stem almoſt naked [2]: erect, ſtriated, ſmooth. Leaves ſmooth; the bottom ones petioled, the petioles and baſes of the leaves veloſe at the ſide. Scales of the calyx lanceolate, naked, blackiſh at the end; the upper ones pellucid, yelloweiſh. Corollas purpliſh [3]. According to D'Allo, the lower leaves are ovate, toothed: the upper linear; and one or two ſmall leaves on the ſtem. Native of Provence, Spain, Italy. Perennial.

63. Stem with ſtriated, ſcabrous branches. Leaves lyrate-pinnate or undivided. Peduncles long, one-flowered. Scales of the calyx ovate, gibbous, with white membranaceous edges, and ending in a ſimple ſpine. Neutral flowers very large, five-cleft, nearly equal, purpliſh: fertile flowers whitiſh, with purpliſh tips, the length of the ray.—Native of Syria. Annual [4]. — Introduced 1777, by John Earl of Bute [5].

64. It reſembles *C. acaulis* (n. 26.) but the ſcales of the calyx are not ciliated. There are generally three flowers growing cloſe to the root; the calyxes ovate-oblong, ſmooth; the ſcales membranous at the edge, entire; ending in a ſhort, ſubulate, yelloweiſh ſpine. Corolla oblong: the neuter floſcules hardly longer than the others. Found in Egypt, by Haſſelquiſt [6].

65. Having a barren ray it is diſtinct from *Carthamus tinctorius* and *creticus*. Native of Tangier. Perennial [7].

66. Calyx ſcarcely villoſe. Receptacle hairy. Down feathery. Seeds ſmooth. Ray but little exceeding the diſk. Neuter corollules almoſt equal, border five-parted, linear. It has the appearance of a Thiſtle; but the neuter florets determine it to be a Centaurea.—Obſerved by Ray in Sicily, Malta, Italy, and about Montpellier [8].

Cultivated 1739, by Mr. Miller [9].

67. It differs from *C. montana* (n. 14.) not only in having the leaves conſtantly laciniate, but the cilias of the ſcales white. However it may be nothing more than a remarkable variety. Mont Cenis, &c. Perennial [10].

68. Smooth, branching. Stem angular. All the leaves pinnate, with two or three pairs of pinnæ, and an odd one longer and larger than the reſt. One ſimple leaf beneath the calyx. Each branch is terminated by an oval head: ſcales yelloweiſh-green, ſtriated, ovate, ſmooth, not ending in a brown ſcale, but having cilias like ſpines about the edge above the middle. Florets reddiſh. It differs from *C. Scabiosa* (n. 23.) in its habit, and other marks [1]. See Villars dauph. 3. 47. n. 5.

69. Root perennial. This ſpecies has much affinity to *C. babylonica*, but yet differs conſiderably from it. Stems four feet high, ſmooth, a little angular, and branched at top. Root-leaves lyrate, much ſmaller than in the *babylonica*, nerved, and with little down on them. Stem-leaves narrow and entire. The flowers are of a fine yellow, and grow in a ſort of panicle at top; the calyx ſmooth, green. Native of Tartary as ſuppoſed. Cultivated many years in the Paris garden [2], and introduced 1781, into the royal garden at Kew [3].

70. Stem two feet high, upright, hard, ſtriated, branched. Leaves large, almoſt ſmooth, or with ſhort hairs, rough to the touch, and cut almoſt to the midrib, into oblong pinnules, ſome entire, others having a few teeth or deep cuts. Flowers terminating, purple, fleſh-coloured, or white. This ſort is perennial, and native of the South of Europe, on the borders of fields and in dry paſtures [4]. It was introduced here in 1778 [5].

71. Introduced 1781. This alſo is a native of the South of Europe: theſe with the 69th were introduced by Mont. Thouin [6].

72. It agrees in ſome characters with *C. orientalis* (n. 27.); but differs in having the radical leaves entire, the calyxes twice as large, the ſcales not at all tomentoſe at the baſe, and their lacinias laciniated all round. The down alſo is very apparent, whereas in *C. orientalis* there is hardly any. The calyx cloſes during the night. The flowers are pale yellow. The plant has no ſmell. The taſte is bitteriſh. Perennial [7].

73. This ſeems to be a mule between *C. ſolſtitialis* (n. 50.) and *panniculata* (n. 16.). It has the habit of the latter, and the ſame height: the leaves are pinnated like that, but the branch-leaves are linear-lanceolate, undivided and decurrent. A flower terminates each branch, ſomewhat larger than in *C. paniculata*. The florets are of a beautiful yellow,

[1] Linn. ſpec.
[2] Linn. mant.
[3] Morifon.
[4] Jacquin.
[5] Hort. kew.
[6] Linn. ſyſt.
[7] Ger. prov.
[8] Hort. kew.
[9] Ray.
[10] Linn. ſpec.

[1] Linn. ſpec.
[2] Linn. ſyſt.
[3] Allion.
[4] Hort. kew.
[5] Hort. kew.
[6] Scopoli.
[7] Lamarck.
[8] Ibid.
[9] Hort. kew.
[10] Linn. amœn.
[1] Hort. kew.
[2] Lamarck.
[3] Hort. kew.
[4] Scop. inſubr.

but have sometimes purple ones mixed with them. The scales of the calyx are surrounded with weak yellow spinules or cilias, but end in a long, stout, yellow spine. This species perfects its seeds. On the hills about Turin. Biennial [1].

74. Stems striate-angular, eighteen inches high, alternately branched. Radical leaves ovate, a little toothed, roughish; stem-leaves ovate tongue-form, sinuated. Flower terminal, yellow: fertile florets with five lanceolate segments; barren or ray florets with five linear ones. Spines of the calyx yellow, the end one much the strongest. Seed crowned with bristles. The whole plant dark green, and roughish. About Nice. Biennial [2].

75. Roots perennial, woody, dry, perpendicular, black on the outside. Stems dividing from the very bottom into numerous, procumbent branches; they are thickish, round, pubescent, streaked longitudinally, from a foot to two feet in length. Leaves all sinuate-toothed, with the end-lobe broader and toothletted, slightly pubescent, all the teeth mucronate but not pungent. Flowers solitary, terminating. Calyx ovate, ferruginous. Corollas both of disk and ray uniformly purple. At the base of the common calyx is a sort of involucre of four or six unequal, concave, inflex leaves, irregularly toothed, lanceolate-ovate at the tip. The flowers have a strong, disagreeable smell. It resembles the *C. fonchifolia*, but on comparison they are very different.

Native of Italy, on the sea shore near Naples, forming very thick tufts in the sand [3].

76. Height eighteen inches. Stem round. Leaves linear-elliptic, hoary beneath, with small teeth ending in a little spine. The lower leaves are opposite, the others alternate. Axillary flowers on a peduncle shorter than the leaf. Flower blue. Head oblong: scales of the calyx imbricate, subulate-spiny. Neuter florets in the ray. Annual.—Found in the vineyards of Uncia by Dana [4].

77. Native of the South of Europe. Cultivated 1758, by Mr. Miller [5].

There are more species of this extensive genus in Vahl and other authors.]

PROPAGATION AND CULTURE.

The numerous species of this genus may be increased without great difficulty, those which are annual by seeds, and such as are perennial both that way and by parting the roots.—The seeds of the greater part may be sown either in spring or autumn in a bed of light earth, either to remain where they are, and in that case only to be thinned and kept clean from weeds; or to be pricked out, when of a proper size, into a bed of fresh earth about six inches asunder, there to remain till autumn, when they should be planted where they are to continue. Most of the species are hardy, and none of them are very tender. Some however require a little protection in this climate.

2. The seeds of *Sweet Sultan* are commonly sown upon a hot-bed in the spring, to bring the plants forward, and in may they are transplanted into the borders of the flower-garden: but if the seeds are sown in a warm border in autumn, they will live through the winter; and these plants may be removed in the spring into the flower-garden: will be stronger, and come earlier to flower than those which are raised in the spring. The seeds may also be sown in the spring on a common warm border, where the plants will rise very well, but these will be later in flowering than either of the other. The autumnal plants will begin to flower the middle of june, and will continue flowering till september; and the spring plants will flower a month later, and continue till the frost stops them. Their seeds ripen in autumn.

β. The *yellow* Sweet Sultan is much tenderer than the former, and the seeds must be sown upon a hot-bed in the spring; when the plants are fit to remove, they should be transplanted on a fresh hot-bed to bring them forward: when they have taken root in this bed, they must have air admitted to them every day, to prevent their drawing up weak; and be refreshed with water sparingly, because they are very apt to rot with much wet. When the plants have obtained strength, they must be carefully taken up, and planted in separate pots filled with light earth, and some of them placed in the shade till they have taken root; then they may be placed with other annual plants in the pleasure-garden, where they will continue long in beauty. But as these plants which are placed in the open air rarely produce good seeds, there should be two or three plants kept in a moderate hot-bed under a deep frame, where they will come earlier to flower: and being protected from wet and cold, they will ripen their seeds every year, which is the surest method to preserve the sort.

6. *Great Centaury* may be propagated by parting the roots. As it requires much room, it is not proper for small gardens: but in large open borders, or on the verges of plantations, with other tall-growing plants, it makes a good figure.

14. *Perennial Blue-bottle* is now become a common plant in large gardens, from the facility with which it is increased. The roots indeed creep so much, that it is apt to become troublesome. It will grow in any soil and situation.

15. There are great varieties of colours in the flowers of the common *annual Blue-bottle*, and some of them are finely variegated. The seeds are sold under the name of Bottles of all colours. They will rise in any common border, and require no other care but to be kept clean from weeds, and thinned where they are too close; for they do not thrive well when they are transplanted. If the seeds be sown in autumn, they will succeed better, and the plants will flower stronger than those which are sown in the spring.

18, 19, 20. May be propagated by slips, or by planting the young branches, which do not shoot up to flower, in a shady border, any time during the summer. In the autumn they may be removed into warm borders, or put into pots to be sheltered in winter.—The 18th will resist the cold of our ordinary winters in the open air, if it be planted in dry lime rubbish.—The 19th may also be propagated by seeds, and will live abroad in moderate winters, if it have a warm situation and dry soil: but since both this and the 20th are frequently destroyed by frost, it will be proper to keep a plant or two under a common frame, to preserve the species.

22. Is propagated by seeds, sown in april in a bed of light earth. In a dry soil, and sheltered situation, it will live in the open air in mild winters; but is frequently destroyed by severe frost.

27. May be propagated by seeds, or parting the roots. As the plants require a large share of room, they should not be placed too near other plants, nor are they proper furniture for small gardens.

34, 37. Not perfecting their seeds in England, good seeds must be procured from their native countries. They are hardy; and being perennial, may be increased, when once obtained, by the root.

36. May be increased and treated like the 6th sort. It is equally hardy, and not spreading so much, may be allowed a place in smaller gardens.

43. This sort may be increased and treated in the same manner as the common annual Blue-bottle (n. 15.). Seeds sown in the spring do not always perfect seeds.

45. The surest method of cultivating the *Carduus Benedictus* is to sow the seeds in autumn; and when the plants come up, to hoe the ground, to cut up the weeds, and thin the plants; and in the following spring to hoe it a second time, leaving the plants a foot asunder: they will ripen their seeds in autumn, and soon after decay.

[1] Allioni. [2] Ibid. [3] Cyrill.
[4] Allioni. [5] Hort. kew.

60. May be eaſily propagated by off-ſets from the roots of the old plants, taken off in autumn. It is very hardy, but ſhould have a dry ſoil.

[72. May be raiſed from ſeeds ſown in the ſpring on a gentle hot-bed: in autumn the plants muſt be removed under ſhelter of a glaſs caſe. It may be propagated by parting the roots.

CENTAUREA. See *Cuicus*, and *Staehelina*.

CENTAURIUM. See *Ageratum*, *Centaurea*, *Chironia*, *Cuicus*, *Eranthemum*, *Serratula*.

Centaurium luteum. See *Chlora*, *Thefium*.]

Centaurium minus. See *Achyranthes*, *Chironia*, *Gentiana*, *Eranthemum*, *Exacum*, *Sarothra*.

[CENTAURY. See *Chlora*, *Gentiana*.

CENTELLA. See *Hydrocotyle*.

CENTUNCULUS. (*The name of a plant in Pliny.*)

*Lin. gen. n.* 145. *Reich.* 151. *Schreb.* 189. *Gærtn. t.* 50. *Juſſ.* 93. *Dill. gen.* 5. *Anagallidaſtrum. Mich.* 10.

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Rotaceæ*. *Lyſimachiæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* four-cleft, ſpreading, permanent; diviſions acute, lanceolate, longer than the corolla.

COR. Monopetalous, rotated. *Tube* ſubglobular; *Border* four-cleft, flat; diviſions ſubovate.

STAM. *Filaments* four, almoſt the length of the corolla. *Anthers* ſimple.

PIST. *Germ* roundiſh, within the tube of the corolla. *Style* filiform, length of the corolla, permanent. *Stigma* ſimple.

PER. *Capſule* globular, unilocular, opening horizontally.

SEEDS very many, very ſmall.

ESSENTIAL CHARACTER.

*Cal.* four-cleft. *Cor.* four-cleft, ſpreading. *Stam.* ſhort. *Capſ.* one-celled, opening horizontally.

SPECIES.

1. Centunculus minimus. *Baſtard Pimpernel.*
*Lin. ſpec.* 169. *Reich.* 326. *ſ. ſuec. n.* 136. *Hudſ. angl.* 63. *With.* 141. *Lightf.* 119. *Curt. lond.* 3. 11. *Berg. phyt.* 2. 133. *Dill. giſs.* 161. & *app.* 111. *t.* 5. *Raii ſyn.* 1. *Hall. helv. n.* 627. *Pollich pal. n.* 163. *Fl. dan. t.* 177. *Villars, dauph.* 2. 313. *Gærtn. fruct.* 1. 228.

Anagallis. *Vaill. par.* 12. *n.* 3. *t.* 4. *f.* 2.

Anagallidiaſtrum. *Mich. gen.* 14. *t.* 18. 2.

Aliſine paluſtris minima, floſc. albis, fructu coriandri exiguo. *Mentz. pug. t.* 7. *f.* 5.

DESCRIPTIONS, &c.

*Root* annual. *Stem* from half an inch to an inch in height or more, ſimple or branched at bottom, rather upright, round and ſmooth. *Leaves* alternate, ſeſſile, ovate, pointed, entire, ſmooth, ſomewhat fleſhy, ſpreading; ſometimes oppoſite towards the bottom, pellucid at the edge, brownish underneath. *Flowers* very minute, ſolitary, axillary, ſeſſile. Calyx divided ſometimes into four, but generally into five narrow ſegments to the baſe. The whole corolla is only one line in diameter, and hyaline or of a clear water or glaſs colour: the ſegments equal and much pointed, very thin and tranſparent. The yellow anthers cloſe the mouth of the tube; and the border does not expand, unleſs the ſun ſhines ſtrongly on it. The globular capſules are like ſmall Coriander ſeeds, and ſeſſile in the axils; they open into two hemiſpheres, and contain ſeven or eight ſeeds attached to a receptacle. Theſe capſules contribute moſt to diſcovering this minute plant *.

Italy, France, Germany, Britain, Denmark; Scania; in ſandy and gravelly places, that are a little moiſt.—With us on Hounſlow heath, Aſhford common, near Hampton-court, Chiſlehurſt, &c.—From june to auguſt.

CENTUNCULUS. See *Cevaſtium*.

CEPA. See *Allium* and *Panerallium*.

CEPÆA. See *Sedum*.

CEPHALIS. See *Collocevia*.

* Withering, Curtis, Vaillant.

CEPHALANTHUS. (Κεφαλη *head* and ανθος, *Head-flower*) *Button-wood, Button-tree, Pond-Dogwood.* Fr. *Bois à boutons.*

*Lin. gen. n.* 113. *Reich.* 119. *Schreb.* 147. *Gærtn. t.* 86. *Juſſ.* 209. *Platanocephalus Vaill. A. G.* 1722.

Claſſ. 4. 1. Tetrandria Monogynia.

Nat. order of *Aggregatæ*. *Rubiaceæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth common* none, but the receptacle collecting many floſcules into a globoſe head.
*Perianth proper* one-leafed, funnel-form, angular, *border* quadrifid.

COR. *Univerſal* equal. *Proper* monopetalous, funnel-form, acute, quadrifid.

STAM. *Filaments* four, inſerted into the corolla; ſhorter than the border. *Anthers* globoſe.

PIST. *Germ* inferior. *Style* longer than the corolla. *Stigma* globoſe.

PER. none. (Capſule quadripartile. *G.*)

SEEDS ſolitary, long, attenuated at the baſe, pyramidal and lanuginous.

REC. Common globular, villoſe.

ESSENTIAL CHARACTER.

*Calyx* common none. *Proper* ſuperior, funnel-form.
*Receptacle* globular, naked. *Seed* one, lanuginous.

SPECIES.

1. Cephalanthus occidentalis. *American Button-wood.*
*Lin. ſpec.* 138. *Reich.* 274. *hort. cliff.* 73. *Gron. virg.* 15. 17. *Duham. arb.* 1. *t.* 54. *Gærtn. fruct.* 2. 41. *Lour. cochinch.* 67.
Scabioſa. *Pluk. alm.* 336. *t.* 77. *f.* 4.
*Leaves in pairs or in threes.*

[2. Cephalanthus anguſtifolius.
*Lour. cochinch.* 67.
*Leaves lanceolate-linear oppoſite.*

3. Cephalanthus procumbens.
*Lour. cochinch.* 67.
*Stem procumbent, leaves ovate-lanceolate alternate.*

4. Cephalanthus montanus.
*Lour. cochinch.* 67.
*Leaves ovate crenate alternate.*

5. Cephalanthus ſtellatus.
*Lour. cochinch.* 68.
*Leaves ſtellate, lanceolate-linear.*]

DESCRIPTIONS, &c.

1. This ſhrub ſeldom riſes higher than ſix or ſeven feet in this country. The branches come out by pairs, oppoſite at each joint. The leaves are either in pairs oppoſite, or there are three at the ſame joint, ſtanding round the branch; theſe are near three inches long, and one and a quarter broad, having a ſtrong vein running longitudinally through the middle, and ſome ſmall tranſverſe veins from that to the borders; they are of a light green, and their foot-ſtalks change to a reddiſh colour next the branches; the ends of the branches are terminated by looſe ſpikes of ſpherical heads, about the ſize of a marble, each of which is compoſed of many ſmall flowers, of a whitiſh yellow colour, faſtened to an axis in the middle; theſe appear in july, and, in warm ſeaſons, are ſucceeded by ſeeds, which have ſometimes ripened in England.

[Gærtner deſcribes the fruit as an inferior capſule, crowned with the permanent calyx, inverſely pyramidal, ſmooth, coriaceous, reddiſh-ſtraw or brick colour, four-celled, and diviſible into four parts, two of the cells commonly abortive, but all valveleſs and never opening ſpontaneouſly. Seeds four or two, one in each cell, oblong, flattiſh or angular on one ſide, convex on the other, thicker at top and terminated by a callous epiphyſis, acuminate at bottom, and of a ferruginous red colour. Linnæus ſays that the ſeeds are lanuginoſe; and Miller affirms that the capſules are globular and villoſe; whereas thoſe which he ſent to Gærtner himſelf were quite ſmooth and agreed with the figure deſcribed above.

Introduced 1735, by Peter Collinſon, eſq *.

* Hort. kew.

2. This is a middle-sized tree, with ascending branches. Leaves quite entire. Flowers pale, in small terminating heads; with an oblong villose common receptacle collecting the florets into a ball: segments of the calyx subulate, hairy, set with shining coloured pedunculed glands. The fruit a small compound berry; the *acini* or component parts roundish, crowned, flaccid, two-celled, one-seeded, inferior.

3. This is a thick shrub, with many long funicular branches. Leaves large, quite entire, tomentose, petioled. Flowers violet-coloured, dioecous, in long interrupted terminating racemes. The females on a naked globular receptacle, without any perianth either proper or common. Corollas five-cleft, inferior, very many, on long peduncles, forming a ball or head. Style capillary, equal to the corolla, with a simple stigma. Seed one ovate compressed naked.

4. This is a large tree, with a hempen bark, and spreading branches. Leaves acuminate crenate petioled, rough above and tomentose beneath. Flowers dioecous, green, on solitary axillary peduncles, forming roundish heads, on a naked globular receptacle. The females have no corolla: proper perianth almost closed, four-cleft, superior. Seed one compressed, crowned with a subpappose wing, perhaps from the laciniated tube of the calyx.

5. This is a middle-sized tree with ascending branches. Leaves by threes, quite entire, smooth. Florets white, terminating, collected into a ball; with a small ovate receptacle, and no common perianth: the proper one is inferior, with four subulate segments. Corolla superior, with a four-cleft reflex border, four subsessile anthers, a long style, and one naked seed*.

Father Loureiro examined the living plants of all the species in their native soil; the first and fourth in China, the others in Cochinchina; and found them to differ very much, both from each other and Linneus's generic character.]

PROPAGATION AND CULTURE.

1. The first sort is propagated chiefly by seeds (though some have been raised from cuttings and layers;) these should be sown in pots, for the greater conveniency of removing them either into a shady situation, or where they may have shelter. If the seeds can be procured so early as to sow them before christmas, the plants will come up the following summer; but if they are sown in the spring, they generally remain a year in the ground; therefore in such case, the pots should be placed in the shade that summer, and in the autumn following removed under a common frame to shelter them from frost, and the spring following the plants will come up.

The first year, it will be necessary to shade the plants in hot dry weather, while they are young, at which time they are often destroyed by being too much exposed; nor should the watering be neglected; for these plants naturally grow on moist ground.

The next autumn, when the leaves begin to drop, the young plants may be transplanted into nursery-beds, which should be a little defended from the cold winds; and, if the soil be moist, they will succeed much better than in dry ground.

In these nursery-beds the plants may remain a year or two, according to the progress they may have made, or the distance at which they were planted; then they may be taken up in october, and transplanted where they are to remain. It may also be performed in the spring, especially if the ground be moist into which they are removed, or that the plants be duly watered, if the spring should prove dry, otherwise there will be more hazard of their growing when removed at this season.

These plants make a pretty variety among other hardy trees and shrubs, being extreme hardy in respect to cold; but they delight in a moist light soil, where they will grow very fast, and their leaves will be larger than in dry land.

[The other sorts are not at present known in Europe.

CEPHALANTHUS. See *Naucleа*.

CEPHALOTUS. See *Thymus*.

CERANTHUS. See *Chionanthus*.]

CERASTIUM. (*From* Κερατιον, *a little horn: the capsules being generally long, and somewhat in that shape.*)

Engl. *Mouse-ear, or Mouse-ear Chickweed.*
Fr. *Oreille de Souris.*

*Lin. gen. n.* 585. *Reich.* 633. *Schreb.* 797. *Gærtn. t.* 130. *Juss.* 301. Myosotis. *Tourn.* 126.

Class. 10. 5. Decandria Pentagynia.

Nat. order of *Caryophillei.*

GENERIC CHARACTER.

CAL. *Perianth* five-leaved; *leaflets* ovate-lanceolate, acute, spreading, permanent.

COR. *Petals* five, bifid, obtuse, erect-expanding, length of the calyx.

STAM. *Filaments* ten, filiform, shorter than the corolla, the alternate ones shorter. *Anthers* roundish.

PIST. *Germ* ovate. *Styles* five, capillary, erect, length of the stamens. *Stigmas* obtuse.

PER. *Capsule* ovate-cylindric, or globular, obtuse, unilocular, gaping with a five-toothed tip.

SEEDS. Very many, roundish.

OBS. *Species* 4. 5. *are furnished with only five stamens. The primary division of the species is to be taken from the oblong or globular form of the capsule.*

ESSENTIAL CHARACTER.

*Cal.* five-leaved. *Petals* bifid. *Capsule* unilocular, gaping at the tip.

SPECIES.

* *With oblong capsules.*

1. Cerastium perfoliatum. *Perfoliate Mouse-ear.*
*Lin. spec.* 627. *Reich.* 2. 398. *hort. cliff.* 173. 1. *Gmel. sib.* 4. 148. *n.* 49. *t.* 62. *f.* 1. (Alsine). Myosotis orientalis perfoliata, lychnidis folio. *Tourn. cor.* 18. *Dill. elth.* 295. *t.* 217. *f.* 284.
*Leaves connate.*

[2. Cerastium vulgatum. *Common* or *narrow-leaved Mouse-ear.*
*Lin. spec.* 627. *Reich.* 2. 398. *fl. suec. n.* 415. *Hudf. angl.* 200. *With.* 476. *Curt. lond.* 2. 34. *Lightf. scot.* 240. *Neck. gallob.* 204. *Pollich pal. n.* 441. *Berg. phyt.* 117. *Villars dauph.* 3. 642.
Myosotis. *Hall. helv. n.* 893. *Vaill. par.* 142. *t.* 30. *f.* 3.
*Leaves ovate; petals equal to the calyx; stems diffused.*

3. Cerastium viscosum. *Clammy*, or *broad-leaved Mouse-ear.*
*Lin. spec.* 627. *Reich.* 2. 399. *hort. cliff.* 174. 4. *fl. suec. n.* 414. *Iapp. n.* 193. *Hudf. angl.* 200. *With.* 477. *Curt. lond.* 2. 35. *Lightf.* 240. *Neck. gallob.* 205. *Pollich pal. n.* 442. *Villars dauph.* 3. 642.
Myosotis. *Hall. helv. n.* 895. *Vaill. par. t.* 30. *f.* 1.
Alsine viscosa. *Park.* 764. *Raii hist.* 1029.
*Erect villose-viscous.*

4. Cerastium semidecandrum. *Least Mouse-ear.*
*Lin. spec.* 627. *Reich.* 2. 399. *hort. cliff.* 173. 2. *fl. suec. n.* 416. *Hudf. angl.* 200. *With.* 477. *Curt. lond.* 2. 33. *Lightf.* 241. *Neck. gallob.* 205. *Pollich pal. n.* 443. *Raii syn.* 348. *t.* 15. *f.* 1. *Villars dauph.* 3. 642.
Myosotis. *Hall. helv. n.* 894. *Vaill. par. t.* 30. *f.* 2.
Centunculus. *Scop. carn. n.* 549.
*Flowers five-stamened, petals emarginate.*]

5. Cerastium pentandrum. *Five-stamened Mouse-ear.*
*Lin. spec.* 627. *Reich.* 2. 400. *Lœfl. it.* 142. *edit. angl.* 2. 140.
*Flowers five-stamened, petals entire.*

[6. Cerastium arvense. *Corn Mouse-ear.*
*Lin. spec.* 628. *Reich.* 2. 400. *fl. suec. n.* 417. *Hudf. angl.* 201. *With.* 478. *Curt. lond.* 62. *Lightf.* 241. *Sowerby engl. bot. t.* 93. *Reich. cant. n.* 341. *Neck. gallob.* 204. *Pollich pal. n.* 444.

* Loureiro.

*n.* 444. *Fl. dan. t.* 626. *Berg. phyt.* 159. *Villars dauph.* 3. 643.
Myosotis. *Hall. helv. n.* 889. *Vaill. par. t.* 30. *f.* 4.
Centunculus arvensis. *Scop. carn. n.* 548.
Caryophyllus holosteus. *Ger.* 477. 1. *emac.* 595. 15, 16. *Park.* 1339. 7. *Raii hist.* 1027.
*Leaves linear-lanceolate obtuse smooth, corollas larger than the calyx.*]

7. Ceraſtium dichotomum. *Forked Mouſe-ear.*
*Lin. ſpec.* 628. *Reich.* 2. 400. *Murr. prodr.* 155.
Aſſine corniculata. *Cluſ. hiſt.* 2. 184.
*Leaves lanceolate; ſtem dichotomous very much branched; capſules erect.*

[8. Ceraſtium alpinum. *Alpine Mouſe-ear.*
*Lin. ſpec.* 628. *Reich.* 2. 400. *fl. ſuec. n.* 418. *lapp. n.* 192. *Hudſ. angl.* 201. *With.* 478. *Fl. dan. t.* 6. *Villars dauph.* 3. 647.
Myosotis. *Hall. helv. n.* 888.
Centunculus alpinus. *Scop. carn. n.* 550.
Aſſine. *Raii ſyn.* 349. 5. *t.* 15. *f.* 2.
*Leaves ovate-lanceolate; ſtem divided; capſules oblong.*]

** *With roundiſh capſules.*

9. Ceraſtium repens. *Creeping Mouſe-ear*, or *Sea-Pink.*
*Lin. ſpec.* 628. *fyſt.* 436. *Reich.* 2. 401.
Stellaria repens. *Scop. carn. n.* 547.
Myosotis. *Vaill. par. t.* 30. *f.* 5?
Ocymoides. *Col. phytob.* 115. *t.* 31. *Raii hiſt.* 1031. 23.
*Leaves lanceolate; peduncles branching; capſules roundiſh.*

[10. Ceraſtium ſtrictum.
*Lin. ſpec.* 629. *Reich.* 2. 401. *Allion. pedem. n.* 1729? *Villars dauph.* 3. 643.
Myosotis. *Hall. helv. n.* 892. *t.* 14. *f.* 1.
Caryophyllus. *Baub. prodr.* 104. *n.* 7.
Centunculus anguſtifolius. *Scop. carn. n.* 551. *t.* 19?
*Leaves linear acuminate ſmooth; peduncles one-flowered ſubtomentoſe; capſules globular.*

11. Ceraſtium ſuffruticoſum.
*Lin. ſpec.* 629. *Reich.* 2. 401.
Myosotis tenuiſſimo fol. rigido. *Tourn. inſt.* 205.
*Stem perennial procumbent; leaves linear-lanceolate ſubhirſute.*

12. Ceraſtium maximum.
*Lin. ſpec.* 629. *Reich.* 2. 402. *Gmel. ſib.* 4. 150. *n.* 51. *t.* 62. *f.* 2.
*Leaves lanceolate ſcabrous; petals crenated; capſules globular.*

13. Ceraſtium aquaticum. *Water Mouſe-ear.*
*Lin. ſpec.* 629. *Reich.* 2. 402. *fl. ſuec. n.* 413. *Hudſ. angl.* 202. *With.* 480. *Curt. lond.* 1. 34. *abr. t.* 22. *Lightf.* 242. *Relh. n.* 342. *Pollich pal. n.* 445. *Leers herb. n.* 347. *Berg. phyt.* 157.
Stellaria aquatica. *Scop. carn. n.* 546.
Aſſine. *Baub. pin.* 250. 10. *Camer. epit.* 851. *Mentz. pug. t.* 2. *Dod.* 29. 1. *Ger.* 488. 1. *emac.* 611. 1. & 613. 10? *Raii hiſt.* 1030. 19. *Hall. helv. n.* 885.
*Leaves cordate ſeſſile; flowers ſolitary; fruits pendulous.*

14. Ceraſtium latifolium. *Broad-leaved Mouſe-ear.*
*Lin. ſpec.* 629. *fyſt.* 436. *Reich.* 2. 402. *Hudſ. angl.* 202. *With.* 478. *Lightf.* 242. *Villars dauph.* 3. 646.
Myosotis. *Hall. helv. n.* 887.
Caryophyllus. *Baub. pin.* 104. *n.* 5.
Herba facie auriculæ muris. *Mart. ſpitzb. t.* G. *f.* d.
*Leaves ovate ſubtomentoſe; branches one-flowered; capſules globular.*]

15. Ceraſtium tomentoſum. *Woolly Mouſe-ear.*
*Lin. ſpec.* 629. *Reich.* 2. 402. *With.* 481. *Berg. phyt.* 69.
Myosotis. *Hall. helv. n.* 891.
Caryophyllus. *Baub. prodr.* 104. *n.* 9, 10. *Raii hiſt.* 1028. 7, 13.
*Leaves oblong tomentoſe; peduncles branching; capſules globular.*

[16. Ceraſtium manticum.
*Lin. ſpec.* 629. *fyſt.* 436. *Reich.* 2. 403. *amæn.* 4. 315.
Aſſine. *Hall. helv. n.* 883. *Segu. veron.* 3. 178. *t.* 4. *f.* 2.
*Smooth; ſtem ſtriated; leaves lanceolate; peduncles very long; capſules globular.*

17. Ceraſtium refractum.
*Allion. pedem. n.* 1728.
C. trigynum. *Villars dauph.* 3. 645.
Myosotis. *Hall. helv. n.* 890.
*Leaves lanceolate ſmooth; petioles hoary.*

18. Ceraſtium dioicum. *Spaniſh Mouſe-ear.*
*Ait. hort. kew.* 2. 121.
*Hirt, viſcid; leaves lanceolate; flowers dioecous, petals three times larger than the calyx.*

DESCRIPTION, &c.

None of the *Mouſe-ear Chickweeds* make much appearance, and therefore they are only cultivated in botanic gardens. Some of them are common weeds in moſt parts of Europe: the ſmoother ſorts however are not diſagreeable to cattle,] and the ſeeds are uſeful to the ſmall birds.

1. The firſt ſort was diſcovered by Tournefort in the Levant, from whence he ſent the ſeeds to the royal garden at Paris: this is an annual plant, which riſes with an upright ſtalk a foot high; the lower leaves have ſo much reſemblance to thoſe of Lobel's Catchfly, that when the plants are young, it is not eaſy to diſtinguiſh them. The ſtem-leaves are of the ſame ſhape, but ſmaller, placed by pairs, and embracing the ſtalks. The flowers come out at the top of the ſtalks, and alſo from the wings of the leaves, on the upper part of the ſtalks; they are white, and ſhaped like thoſe of Chickweed; appear in may and june, and are ſucceeded by beaked capſules, containing many roundiſh ſeeds.

Linnæus obſerves that the piſtils are ſhorter than in the other ſorts.

Native of Greece. Cultivated in 1731, by Mr. Miller *.

2. This ſpecies may be diſtinguiſhed from the third and fourth by the following circumſtances:—1. It is perennial. 2. The hairs on the ſtalks, leaves and calyx are much longer and coarſer, nor are they terminated by a viſcous globule. 3. It is a larger, more ſpreading plant, and more common. Sometimes it is but thinly covered with hairs, and has been found quite ſmooth. It varies in height from an inch to two feet, alſo in the breadth of its leaves, and the ſize of its corolla. The ſtronger the plant the ſmaller the petals, and *vice verſa* †.

According to Linnæus the capſules are ſmaller than in *C. viſcoſum*; the leaves leſs lanceolate and more ovate (the reverſe is generally obſervable with us). The peduncles are not viſcid. Stems more copious, more decumbent, flowering later, continuing longer. The outer leaflets of the calyx not membranous at the edge. Linnæus marks it as annual, in which he is followed by Hudſon and Lightfoot: others make it perennial.

It flowers during the whole ſummer from may, on walls, by road ſides, among rubbiſh, and in meadows.

3. This alſo is annual. It is diſtinguiſhed by its upright growth, its broad hoary leaves, the narrowneſs of its petals, and the crowded or cluſtered appearance of its flowers before they blow; its leaves alſo are in general paler. Stem branched at bottom, covered with hairs, each of which is terminated by a gland exuding a viſcid juice.—In meadows, on walls, dry banks and ant-hills, varying in ſize from three inches to a foot; flowering in april and may ‡.

4. Stamens ſometimes only five, according to Haller. Linnæus ſays there are always ten ſtamens. Petals ſhorter than the calyx, acutely cut in at top, and frequently irregularly jagged or gnawed, much broader than in the foregoing. Calyx thickly covered with hairs, having glands at their extremities; membrane terminating the leaflets remarkably long. Stems from two to ſix inches high, purpliſh,

* Hort. kew. † Curtis. ‡ Hall.



covered

covered with glandulous hairs. Annual.—Walls, heaths; flowering early and ſoon diſappearing [r].

Linneus ſays, that there are five fertile ſtamens, and five interior ones without anthers; and that there are five nectareous points between the fertile ſtamens, and the petals; according to others, the number of ſtamens is uncertain (five or more): Gerard ſays, from five to ten; Haller affirms that there are five only; Scopoli and Pollich, that there are ten. Germ ovate; ſtyles five, according to Linneus. Gerard ſays, that there are three or five; and Haller confines the number to three.

5. Very ſmall, reſembling the foregoing; from which it differs in the colour being green not hoary, in having only five fertile ſtamens without any barren ones, five ſtyles, the petals much ſhorter than the calyx, lanceolate and acute, not acutely emarginate.—Spain [s].

6. Root perennial, creeping. Stems numerous, four or five inches high, forming thick tufts, hirſute, decumbent. Leaves and calyx hairy. Branches terminated by one, two or three large flowers, axillary, ſolitary, on long peduncles. Corolla very large, white, like that of Stichwort (*Stellaria holoſtea*); petals heart-ſhaped ſtriated. Anthers pale yellow. Germ globular. Capſule cylindrical, ſlender, ſhorter than the calyx, ſplitting into five narrow valves, pellucid and almoſt membranous [t]. The whole plant is often very hairy [u].—May and june to ſeptember, in corn-fields, dry paſtures and heaths, banks, *&c.*—Near Croydon in Surry, about Newmarket, Bury, and Norwich; in Cambridgeſhire frequent.]

7. Stems about ſix inches high, dichotomous; the flowers come out in the middle of the diviſions, and are ſhaped like thoſe of Chickweed. The whole plant is clammy. It grows on arable land in Spain, is annual, flowers in may, and the ſeeds ripen in july. [Cultivated 1731, by Mr. Miller [x].

According to Murray, it is tender, hairy, viſcid. Stem decumbent, with ſwelling joints; the dichotomy ſcarcely viſible in many ſpecimens, in others plain enough. Leaves lanceolate, ſeſſile. Calyx four times longer than the corolla.

8. Leaves ſometimes puheſcent, ſometimes quite ſmooth [y]. Root creeping. Stems many, ſix or eight inches high, ſomewhat hairy. Flowers in a terminal umbel, ſix or eight together; peduncles erect, ſomewhat hairy, as is the calyx. Corolla ſtriated, larger than the calyx [z].—On high mountains in many parts of Europe. Snowdon, and other parts of Wales.]

9. This ſends out many weak ſtalks which trail upon the ground, and put out roots at their joints; the leaves are about two inches long, and little more than half an inch broad, very hoary; thoſe next the root are much ſmaller than the upper ones. The flowers come out from the ſide of the ſtalks upon ſlender peduncles, which branch out into ſeveral ſmaller, each ſupporting a white flower. [The petals are often quadrifid or quinquefid.]

It grows naturally in France and Italy, and was formerly cultivated in the Engliſh gardens, under the name of Sea Pink, as an edging for borders; for which uſe it was by no means fit on account of its creeping.

[It is doubted by ſome whether this be really different from the the *arvenſe*; they are certainly very much alike.]

It is ſuppoſed to increaſe the milk of kine and ſheep very much; whence the Neapolitans call it *Erba lattaria* [a]. Cultivated 1759, by Mr. Miller [b].

10. It has the appearance of *Auricula muris pulchro flore, fol. tenuiſſimo.* Bauh. hiſt. 3. 360. but the flower of *Arenaria montana.* Leaves ſtiff, very much acuminated. Stems ſmooth, procumbent. Peduncle one or two-flowered, with two ſhort, lanceolate, broader bractes in the middle: this and the calyx are ſomewhat tomentoſe [c].

Allioni has given a long deſcription, and doubts whether his plant be the ſame with Linneus and Haller's ſince the capſule is cylindric. Scopoli's and Haller's figures are widely different.—Mountains of Switzerland, Auſtria, the Vaudois, M. Cenis, *&c.* Perennial.

11. In the ſouthern countries of Europe.

12. Found in Siberia, near the river Jeniſea; by Gmelin. Annual.

13. Nearly allied to *Stellaria nemorum.* Accordingly Scopoli has ranged it with the Stellarias.—Haller makes it an *Alſine*, and Mr. Curtis obſerves that it has the greateſt natural affinity with *A. media* or common Chickweed. They are diſtinguiſhable however (according to Dr. Stokes) by the lower ſtem-leaves of *A. media* having petioles, and one edge of the ſtem only being ſet with hairs; while in *C. aquaticum* the hairineſs is general.

Root perennial. Stems from one to two feet high, weak, round or ſcarce perceptibly ancipital, ſmooth, jointed: the joints reddiſh at the baſe. Branches rather few, ſolitary, alternate, ſimple, often as long as the ſtem, hairy above. Leaves ſtem-claſping, waved at the edge, acute, ſmooth, with a ſharpiſh keel; the uppermoſt ſomewhat hairy; the firſt leaves of the branches ſmaller, cordate, with ciliate petioles. Flowers from the boſoms of the upper leaves and the forks of the ſtem: the peduncles and calyxes hairy, viſcid. Corollas white, twice as large as the calyx, with the petals divided almoſt to the bottom. Capſule ovate, obtuſely pentangular, ſcarcely longer than the calyx, five-valved, hollow above, one-celled. Seeds roundiſh, reddiſh brown [d].

The five ſtamens placed between the petals are a little longer than the others, and have a gland at bottom. Anthers white, bilocular [e].—Moiſt places and banks of ditches and rivers; flowering in july and auguſt.

14. The whole plant, except the petals and capſules, is covered with long, ſoft, ſhining hairs. The lower leaves ovate; the upper ovate-lanceolate. Branches terminated by one or two flowers, on ſeparate peduncles, each furniſhed with two oppoſite lanceolate leaves or bractes. Capſules firſt roundiſh, afterwards lengthened into a horn. Stems proſtrate, branching, divaricated at right angles. Flowers large. Calyxes campanulate [f].

According to Haller, the ſtems are ſcarcely ever more than three inches high. One flower, ſeldom two, erect, an inch in diameter, on the top of the plant; petals white, deeply biſid. Capſule roundiſh, as it ripens lengthening into a ſtraight and very broad horn.—On the high mountains of the Valais, next the glaciers. On the higheſt rocks in Wales and Scotland; flowering in may and june. Perennial.

15. The whole plant white with a thick down. Stems in a thickly matted tuft, dichotomous, with ſometimes a ſingle flower on a long peduncle from the diviſion; the diviſions branched but ſpreading, each branch bearing a ſort of umbel. Leaves gradually narrower downwards, the pair below the forks of the ſtem about three lines and a half broad and ten long. Peduncles ſingle, of various lengths. Bractes lanceolate, with membranaceous edges, in pairs at each diviſion of the ſtem. Corolla as long again as the calyx, cloven not half way down, ſegments blunt [g].—Native of Granada, Iſtria, France, Switzerland. Ripton-wood in Huntingdonſhire. Flowers in may and june. Perennial.

It varies with broader and narrower leaves.

16. Root, ſlender, annual. Stem upright, round, half a foot high, commonly ſingle, but ſometimes branched: it has five or ſix joints, farther from each other as they recede from the root. Two upright peduncles, two or three inches in length come out from the top; they are dichotomous, with a ſimple peduncle between them. Petals twice as long as the calyx, white and roundiſh. Capſule ten-toothed at the edge, containing ſubrufous, kidney-ſhaped,

[r] Curtis. [s] Linn. [t] Engl. bot. [u] Ray. [x] Hort. kew. [y] Linn. [z] Haller. [a] Columna. [b] Hort. kew. [c] Linn. [d] Linn. ſuec. [e] Curtis. [f] Linn. ſyſt. [g] Woodw. Met.

wrinkled seeds[1]. The petals being entire, it probably rather belongs to the genus *Spergula*.

Linnæus says, that it has the stem and stature of *Stellaria graminea*, the whole smooth, and a foot high. Panicle trifid, with small lanceolate bractes. Styles three.

It is an annual plant, native of the neighbourhood of Verona (in sylvula Mantica) and the Grisons.

17. Stems many, a finger's length, smooth or somewhat hairy, two-flowered; peduncles long, one broken or jointed, with two ſtipules at the joint, they are evidently hairy. Corolla larger than the calyx, the petals cleft to one-third of the length, segments linear. Styles sometimes four. Capsule conic-polygon, transparent, opening by seven valves parting as far as the middle. Perennial[1]. Haller says, that the stems are prostrate, changing their direction at every pair of leaves, and that the capsule has six valves.—On the higher Alps, mont St. Bernard.

18. Native of Spain. Perennial. Cultivated 1766, in the botanic garden at Oxford[4].]

PROPAGATION AND CULTURE.

1. If the seeds of this, or the other annual sorts be sown in autumn, they will more certainly grow than those which are sown in the spring; or if the seeds be permitted to scatter, the plants will come up and live through the winter, and will require no other care but to keep them clean from weeds.

9. It propagates too fast by its creeping roots and trailing branches, when admitted into gardens; but it is very proper to be planted on rock-work, where it will spread and thrive without care.

[This and the other perennial sorts may easily be increased by parting the plants, which put out roots at the joints of the branches, and run so much, as to overpower most other weak vegetables: they should be introduced therefore with caution, unless where it is wished to have a bank, wall, or heap of stones entirely covered.

CERASTIUM umbellatum. See *Holosteum*.

CERASA. See *Cordia* and *Prunus*.

CERASO AFFINIS. See *Cordia*, *Ehretia*, and *Prunus*.

CERASUS. See *Cassine*, *Malpighia*, and *Prunus*.

CERATIA. See *Cerris*, *Dentaria*, and *Erythrina*.

CERATIÆ AFFINIS. See *Mimosa*.]

[CERATOCARPUS. (*From κερας and καρπος, horned fruit.*)

*Lin. gen. n.* 1035. *Reich.* 1125. *Schreb.* 1392. *Buxb. alt. petrop.* 1. 241. *t.* 9. *Gmel. sib.* 3. 14. *Gueldenſtædt nov. act. petrop.* 16. 553. *t.* 17. *f.* 7–12. *Gærtn. t.* 127. *Juſſ.* 86.

Claſſ. 21. 1. Monoecia Monandria.

Nat. order of *Holoraceæ*. *Atriplices* Juſſ.

GENERIC CHARACTER.

* *Male* flowers.

CAL. *Perianth* one-leafed, tubular, wider at top, thin, coloured, bifid: the upper ſegments ſharp, the lower emarginate.

COR. none.

STAM. *Filament* ſingle, capillary, ſcarce longer than the calyx, inſerted into the receptacle. *Anther* twin, oval, upright.

*Female* flowers on the ſame plant.

CAL. *Perianth* one-leafed, obovate, compreſſed, keeled on both ſides, permanent, two-horned: *horns* ſtraight, ſubulate, divaricate.

COR. none.

PIST. *Germ* oblong, ſuperior. *Styles* two, capillary. *Stigmas* ſimple, ſtanding out between the horns of the calyx.

PER. none: but the calyx grown larger.

SEED oblong, attenuated at bottom, compreſſed.

ESSENTIAL CHARACTER.

MALE. *Cal.* one-leafed, bifid. (two-leaved, *G.*) *Cor.* none.

FEM. *Cal.* one-leafed, keeled, permanent, two-horned. *Styles* two. *Seeds* ſingle, compreſſed, incloſed in and covered by the calyx.

SPECIES.

1. Ceratocarpus arenarius.

*Lin. ſpec.* 1375. *Reich.* 4. 88. *amæn.* 1. 412. 139. *hort. upſ.* 281. *Gærtn. fruct.* 2. 209. *Buxb. alt. petrop.* 1. 244. *t.* 9. *Gmel. ſib.* 3. 14.

DESCRIPTION, *&c.*

It is an annual, branching plant, with very narrow, ſharp, graſſy leaves. Three male flowers ſeſſile in each diviſion of the ſtem; females ſolitary, ſeſſile in each axilla of the leaves[2].

It has no proper pericarp, but the calyx when ripe becomes a ſort of oblong-triangular compreſſed ſheath, with a ridge on each ſide, and two innocuous ſpines diverging almoſt horizontally at the end. Within this is a ſingle obovate ſeed, compreſſed, and at bottom very ſharp-pointed, which does not drop from its covering[3].

It is a native of the rude deſerts of Tartary.

CERATOCEPHALOIDES, CERATOCEPHALUS. } See *Bidens*, *Coreopſis*, *Cotula*, *Spilanthus*.

CERATOIDES. See *Axyris*, *Ceratocarpus*, *Diotis*.]

CERATONIA. (Κερατωνια, *Theophr*, from Κερατιον, *a horn or pod.*)

Engl. *Carob-tree. St. John's bread.* Fr. *Caroubier.*

*Lin. gen. n.* 1167. *Reich.* 1282. *Schreb.* 1612. *Juſſ.* 347. *Fuſano. t.* 14. *f.* 2. *Gærtn. t.* 146. Siliqua. *Tourn.* 304.

Claſſ. 23. 3. Polygamia Trioecia.

Natural order of *Lomentaceæ*. *Leguminoſæ*, Juſſ. *&c.*

GENERIC CHARACTER.

* *Male.*

CAL. *Perianth* five-parted, very large.

COR. none.

STAM. *Filaments* five, ſubulate, very long, ſpreading. *Anthers* large, twin.

* *Female.* Dill.

CAL. *Perianth* one-leafed, divided by five tubercles.

COR. none.

PIST. *Germ* lying concealed within a fleſhy receptacle. *Style* long, filiform. *Stigma* headed.

PER. *Legume* very large, obtuſe, compreſſed, coriaceous, with a great many tranſverſe partitions, the interſtices filled with pulp.

SEED ſolitary, roundiſh, compreſſed, hard, gloſſy. Hermaphrodite flowers on a diſtinct tree.

ESSENTIAL CHARACTER.

Hermaphrodite. *Calyx* five-parted. *Cor.* none. *Stamens* five. *Style* filiform. *Legume* coriaceous, many-seeded.

Dioecious. Male and female ſeparate.

SPECIES.

1. Ceratonia Siliqua. *The Carob tree.*

*Lin. ſpec.* 1513. *Reich.* 4. 364. *hort. upſ.* 296. *mat. med.* 455. *Fuſano in act. neap.* 1787. *p.* 248. *t.* 18. *f.* 2. *Gærtn. fruct.* 2. 310. *Dod. pempt.* 787. *f.* 1.

Siliqua edulis. *Bauh. pin.* 402. *Raii hiſt.* 1718. *Ger.* 1241. *emac.* 1429. *Park.* 236. 1. *Camer. epit.* 139. *Blackw. t.* 209.

DESCRIPTION, *&c.*

The Carob-tree ſometimes grows to a conſiderable ſize. Leaves pinnate; leaflets roundiſh, entire, thick, rigid, nerved, dark green above paler beneath, three inches in breadth and ſomewhat more in length. [Legume four inches or more in length, very little bent, compreſſed, becoming four-cornered when dry, of a duſky ferruginous colour, ſmooth, fleſhy, many-celled, valveleſs; cells eight or more, each inveſted with a papery lamina, and containing one obovate, ſwelling lens-ſhaped, ſmooth ſeed of a ferruginous cheſtnut colour[4].

The hermaphrodite flowers have a one-leafed perianth, deeply five-cleft, coloured; the ſegments unequal and blunt. Corolla one-petalled, wheel-ſhaped, entire, waved about the edge, coriaceous, permanent. Filaments five, fixed to the margin of the corolla, and ſcarcely longer than it. Anthers large. Piſtil in the middle of the corolla, pedicelled: germ linear, compreſſed, ſomewhat ſickle-ſhaped: ſtyle none: ſtigma ſeſſile, orbicular, flat,

[1] Seguier. [2] Allioni. [3] Hort. kew. [4] Linn. upſ. & amoen. [5] Gærtner. [6] Ibid.

marked

marked with a groove from the middle running into the germ.

The male flowers have alſo a one-leafed perianth deeply ſix-cleft; the ſegments unequal, ovate, concave. Corolla waved or obſcurely crenate, in other reſpects like that of the hermaphrodite. Filaments ſix, three times as long as the corolla, ſpreading, fixed to the angles of the notches under the margin of the corolla: anthers large, four-celled. Piſtil none, but a mere rudiment[a].

Native of Syria, Paleſtine, Egypt, Cyprus, Candia, Sicily, Apulia, Spain, *&c.* Cultivated 1570[a].

Ignorance of Eaſtern manners and natural hiſtory, induced ſome perſons to fancy that the locuſts on which John the baptiſt fed, were the tender ſhoots of plants, and that the wild honey was the pulp in the pod of the Carob, whence it had the name of St. John's-bread: there is better reaſon to ſuppoſe that the ſhells of the Carob pod might be the huſks which the prodigal ſon deſired to partake of with the ſwine.]

PROPAGATION AND CULTURE.

This tree is propagated from ſeeds, which, when brought over freſh in the pods, will grow very well, if they are ſown in the ſpring upon a moderate hot-bed; and when the plants are come up they ſhould be carefully tranſplanted each into a ſeparate ſmall pot filled with light rich earth, and plunged into another moderate hot-bed, obſerving to water and ſhade them until they have taken root; after which you muſt let them have air, in proportion to the heat of the weather. In june you muſt inure them to the open air by degrees; and in july they ſhould be removed out of the hot-bed, and placed in a warm ſituation, where they may remain until the beginning of october, when they ſhould be removed into the greenhouſe, placing them where they may have free air in mild weather; for they are pretty hardy, and require only to be ſheltered from hard froſts. When the plants have remained in the pots three or four years, and have gotten ſtrength, ſome of them may be turned out of the pots in the ſpring, and planted into the full ground, in a warm ſituation, near a ſouth wall, where they will endure the cold of our ordinary winters very well, but muſt have ſome ſhelter in very hard weather.

I have not as yet ſeen any of theſe trees produce flowers, though from ſome which have been planted ſome time againſt walls, it is probable there may be flowers and fruit in a few years; but it cannot be expected that the fruit will ever ripen in this country.

The leaves always continue green, and being different in ſhape from thoſe of moſt other plants, afford an agreeable variety when intermixed with Oranges, Myrtles, *&c.* in the greenhouſe.

[CERATONIA. See *Memeſa*.

CERATOPHYLLUM. (κέρας & φύλλον, *horned leaf.*) *Lin. gen. n.* 1065. *Reich.* 1162. *Schreb.* 1439. *Juſſ.* 18. Hydroceratophyllon. *Vaill. A. G.* 1719. *t.* 2. *f.* 2. Dichotophyllum. *Dill. gen.* 3. *giſſ.* 149. *t.* 7.

Claſſ. 21. 8. Monoecia Polyandria.

Natural order of *Inundatæ*. *Naiades* Juſſ.

GENERIC CHARACTER.

* *Male flowers.*

CAL. *Perianth* many-parted; *diviſions* ſubulate, equal.

COR. none.

STAM. *Filaments* double the number of diviſions of the calyx (ſixteen to twenty), hardly conſpicuous. *Anthers* oblong, erect, longer than the calyx.

* *Female flowers*, on the ſame plant with the males.

CAL. *Perianth* many-parted; *diviſions* ſubulate, equal.

COR. none.

PIST. *Germ* ovate, compreſſed. *Style* none. *Stigma* obtuſe, oblique.

PER. none.

SEED. *Nut* ovate, unilocular, acuminate.

[a] Faſcic. [a] Hort. kew from Lobel.

ESSENTIAL CHARACTER.

MALE. *Cal.* many-parted. *Cor.* none. *Stam.* ſixteen to twenty.

FEMALE. *Cal.* many-parted. *Cor.* none. *Piſt.* one. *Style* none. *Seed* one, naked.

SPECIES.

1. Ceratophyllum demerſum. *Prickly-ſeeded Hornwort. Lin. ſpec.* 1409. *Reich.* 4. 153. *hort. cliff.* 446. *fl. ſuec.* 866. *Hudſ. angl.* 419. *With.* 1076. *Lightf.* 580. *Hall. helv. n.* 1599. *Fl. dan. t.* 510. *Poliich pal. n.* 904. *Brown. jam.* 345. *Villars dauph.* 3. 758.

Hydroceratophyllum. *Vaill. act. par.* 1719. *t.* 2. *f.* 2. *right.*

Equiſetum. *Laſ. pruſſ.* 67. *t.* 12.

*Leaves two-fold dichotomous; fruits three-thorned.*

2. Ceratophyllum ſubmerſum. *Smooth-ſeeded Hornwort. Lin. ſpec.* 1409. *Reich.* 4. 153. *Hudſ. angl.* 419. 1. β. *With.* 1077. β. *Vaill. act. t.* 2. *f.* 2. *left. Leers herborn. n.* 735. *Villars dauph.* 3. 758.

*Leaves three-fold dichotomous; fruits thornleſs.*

DESCRIPTIONS, *&c.*

1. Root perennial, ſtriking deep in the mud. Stem much branched. Leaves in whorls, about eight in a whorl, the lower whorls about half an inch diſtant, but cloſer upwards, and extremely crowded towards the top, ſetaceous, harſh, and ſomewhat brittle, ſemi-tranſparent, green with ſhort purple lines, and the extreme forks toothed on the outſide only, thoſe on the lower part of the ſtem in the mud, ſhort, dichotomous, much thicker than thoſe above, and appearing as if broken or bitten. Flowers few, in the boſoms of the leaves. Seed-veſſel with one long thorn at the extremity, and two ſhorter on the oppoſite ſides near the baſe[t].

Ditches and ſlow ſtreams, flowering in auguſt and ſeptember, in Europe. Alſo in Japan. Common in Jamaica, called there Morafs-weed, and uſed to cover fiſh, *&c.* when carried to any diſtance.

2. Linneus allows this to be ſo nearly allied to the foregoing, as to be little elſe than a variety. Haller would ſcarcely ſeparate it, and even doubts of its exiſtence, ſpecimens ſent him from Paris under the name of *Hydroceratophyllum folio lævi otto cornubus armato* of Vaillant having the leaves twice dichotomous like the other. Hudſon and Withering give it as a variety only, and if it exiſt at all, it is probably no more than a trifling variety. Mr. Woodward ſays, that he has never found any other than the one above deſcribed, and that the figure in *Flora Danica, t.* 412. referred in *ſyſt. veg.* and *Reichard* to *C. ſubmerſum* of Linneus has leaves twice divided into two, and conſequently anſwering to the ſpecific character of *demerſum*, not of *ſubmerſum*; though this figure be called *ſubmerſum*, Linn. by the author, yet it is referred to Haller (n. 1599.) who deſcribes *demerſum*[u].

Monſ. Villars ſays, that it is thicker than the other, that it ſeems to creep wholly at the bottom of the water, and that it is whiter by means of a varniſh of mud that covers it.

In the ditches on the ſide of the road from Chicheſter to the iſle of Seſſey.

PROPAGATION AND CULTURE.

Theſe plants can be cultivated in gardens, no other way than by ſowing the ſeeds or planting them in ponds, muddy ſtreams, pots or boxes, with earth at bottom and filled with water.]

CERBERA. (*From Cerberus; ſo named on account of its poiſonous qualities.*)

*Lin. gen. n.* 294. *Reich.* 319. *Schreb.* 415. *Jacqu. amer.* 48. *Juſſ.* 149. Ahouai. *Tourn.* 434. *Jacqu. amer.* 48.

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Contortæ*. *Apocineæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved, acuminate, ſpreading; *leaflets* ovate-lanceolate.

COR. monopetalous, funnel-form. *Tube* clavated; *border* large, five-parted; *diviſions* oblique, obtuſe,

[t] Woodw. Mſſ. [u] Ibid.

more gibbous on one side than the other; mouth of the tube pentagonal, five-toothed, converging in the form of a ſtar.

STAM. *Filaments* five, ſubulate in the middle of the tube. *Anthers* erect, converging.

PIST. *Germ* roundiſh. *Style* filiform, ſhort. *Stigma* headed, bilobate.

PER. *Drupe* very large, roundiſh, fleſhy; excavated on the ſide by a longitudinal furrow, and with two ſpecks or points.

SEED. *Nut* two-celled, four-valved, retuſe.

ESSENTIAL CHARACTER.

Contorted. *Drupe* one-ſeeded.

SPECIES.

1. Cerbera Ahouai. *Oval-leaved Cerbera.*
*Lin. ſpec.* 303. *Reich.* 590.
Thevetia. *Lin. hort. cliff.* 75.
Ahouai. *Thev. antarct.* 66. *Raii hiſt.* 1676.
*Leaves ovate.*

2. Cerbera Manghas.
*Lin. ſpec.* 303. *Reich.* 591. *Fl. zeyl. n.* 106. *Oſb. it.* 91. *Pet. gaz. t.* 16. *f.* 4.
Manghas. *Burm. zeyl.* 151. *t.* 70. *f.* 1. *Raii hiſt.* 1552.
Arbor lactaria. *Rumph. amb.* 2. 243. *t.* 81.
Odallam. *Rheed. mal.* 1. 71. *t.* 39.
*Leaves lanceolate, nerves tranſverſe.*

3. Cerbera Thevetia. *Linear-leaved Cerbera.*
*Lin. ſpec.* 304. *Reich.* 591. *Jacqu. amer.* 48. *t.* 34. *pict.* 20. *t.* 47. *Swartz obſ.* 102.
Plumeria. *Brown. jam.* 181. *t.*
Ahouai. *Plum. ic.* 18.
Nerio-affinis. *Pluk. alm. t.* 207. *f.* 3.
Yeeotli. *Hern. mex.* 443. *f.* 1.
*Leaves linear, very long, crowded.*

[4. Cerbera parviflora.
*Forſt. fl. auſtral. n.* 121.
*Leaves ſtellate obovate.*

5. Cerbera ſalutaris.
*Lour. cochinch.* 136.
Lactaria ſalubris. *Rumph. amb.* 3. 255. *t.* 84.
*Leaves and fruits oval.*]

DESCRIPTIONS, &c.

1. The firſt ſort grows naturally in the Brazils, and alſo in the Spaniſh Weſt Indies in plenty; and there are ſome of the trees growing in the Britiſh iſlands of America; this riſes with an irregular ſtem to the height of eight or ten feet, ſending out many crooked diffuſed branches, which toward their tops have thick ſucculent leaves about three inches long, and near two broad, of a lucid green, ſmooth, and very full of a milky juice, as is every part of the ſhrub. The flowers come out in looſe bunches at the end of the branches; they are of a cream colour, having long narrow tubes cut into five obtuſe ſegments, which ſeem twiſted, ſo as to ſtand oblique to the tube; theſe when they ſpread open have the appearance of the flowers of Oleander. It flowers in July and auguſt, but never produces fruit in England. The wood of this tree ſtinks moſt abominably, and the kernels of the nuts are a moſt deadly poiſon. The Indians are not acquainted with any antidote to it; nor will they uſe the wood for fuel. They put ſmall ſtones into the empty nuts, ſtring them, and faſten them about their legs when they dance.

[Cultivated 1739, by Mr. Miller[a].

2. A milky tree. Leaves alternate, ſcattered at the tops of the branches, broad-lanceolate, petioled, ſmooth, quite entire, a ſpoot in length. Flowers in terminal, branched, unequal racemes. Calyx coloured, deciduous. Corolla white; tube longer than the calyx, angular within; diviſions ovate, ſhorter than the tube. Filaments very ſhort, in the upper part of the tube: anthers ovate, quadrangular, covered with the down of the tube. Germ bifid: ſtyle rather ſhorter than the tube: ſtigma ovate, cleft. Drupe ovate, the ſize of a gooſe's egg, green with very minute white dots, compreſſed on one ſide and with an obſcure ſuture, including two ſeeds reſembling two large cheſtnuts, poiſonous and vomiting[b].]

According to Mr. Miller, it riſes to the height of twenty feet, ſending out many branches toward the top. Leaves rounded at the ends, thick, ſucculent, on their upper ſide of a lucid green, but paler underneath.—Native of the Eaſt Indies, ſome parts of the Spaniſh Weſt Indies, [and of the Society iſlands[c].

3. this is an elegant ſhrub or ſmall tree, about twelve feet in height. The ſtem is round, unarmed, abounding in a poiſonous milky juice, dividing at top into many weak branches, which are generally ſimple, looſe, round, ſmooth, covered with ſcars from the leaves which have dropped,] and covered with a green ſmooth bark, which as they grow older becomes rough, and changes to a gray or aſh-colour. [Leaves on very ſhort petioles, ſcattered at the ends of the branchlets, acuminate, very entire, ſpreading, of a firm conſiſtence, ſmooth on both ſides, of a ſhining green, but paler underneath,] four or five inches long, and half an inch broad in the middle, full of a milky juice, which flows out when they are broken. [Stipules none. Peduncles terminating (axillary, *Jacq.*) ſhorter than the leaves, three or four crowded together, round, uſually one-flowered. Flowers large, ſpecious, nodding, yellow, ſmelling very ſweet. Corolla contorted. Nectary in the throat of the tube, five-cornered, five-toothed, converging into a ſtar, and ciliate between the rays. Filaments very ſhort, below the ſtar, faſtened to the tube, prominent towards the angles of the ſtigma. Anthers ovate, acute. Germ five-ſtreaked, ſurrounded by a yellow fleſhy nectareous navel. Stigma five-cornered, bifid at the tip. Fruit a green oblate-ſpheroidal drupe, containing an obſcurely four-cornered nut, with a ſingle kernel in it[d].

Native of the Weſt Indies, in woods or coppices near the coaſt.] Mr. Miller ſays, that he received it from our iſlands there by the name of French Phyſic nut; that it flowers here in july and auguſt, but never produces fruit in England.

[It was introduced in 1735, by Mr. Robert Millar[e].

[a] Swartz obſerves, that this ſpecies with *C. Ahouai*, would form a genus diſtinct from *C. Manghas*, if it were not for multiplying genera too much.

4. Native of the Friendly iſlands, and Savage iſland, in the South Seas[f].

5. This is a middle-ſized tree, with a milky juice. and ſpreading branches. Leaves oblong-oval, obtuſe, quite entire, ſhining, crowded at the ends of the branches, ſubpetioled. Flowers white, inodorous, in ſmall ſubterminating racemes. Calyx five-cleft, ſegments ſubulate long erect. Corolla ſalver-ſhaped, with a long curved tube, the ſegments of the border oblong fleſhy ſpreading, not contorted. Germ ovate, very ſmall: ſtyle longer than the ſtamens, thick, curved, always burſting the tube of the corolla: ſtigma turbinate, vertically compreſſed, truncate. Drupe oval, large, with a ſmooth ſkin, yellow on one ſide, red on the other, containing a fibrous-woody nut, with a ſingle kernel in it not poiſonous.

Native of Cochinchina, near the coaſt[g].]

PROPAGATION AND CULTURE.

Theſe plants may be propagated from their nuts, which muſt be procured from the countries where they grow naturally; theſe ſhould be put into ſmall pots filled with light earth, and plunged into a hot-bed of tanners bark in the ſpring, and treated in the ſame manner as other tender exotic ſeeds, giving them now and then a little water to promote their vegetation. When the plants are come up about two inches high, they ſhould be tranſplanted each into a ſeparate pot, filled with light ſandy earth, and plunged again into a hot-bed of tanners bark, obſerving to ſhade the glaſſes in the heat of the day,

[a] Hort. kew.
[b] Olbeck in Linn. ſpec.
[c] Forſter.
[d] Swartz and Jacquin.
[e] Hort. kew.
[f] Forſter.
[g] Loureiro.

until the plants have taken new root; they muſt alſo be frequently refreſhed with water, but it muſt not be given in too large quantities. As the ſummer advances, theſe plants ſhould have air admitted to them in proportion to the warmth of the ſeaſon; and when they have filled theſe ſmall pots with their roots, they ſhould be turned out and tranſplanted into other pots of a larger ſize, but they muſt not be too large; for the roots of theſe plants ſhould be confined, nor ſhould the earth in which they are planted be rich, but a light ſandy ſoil is beſt for them; after they are new potted they ſhould be plunged into the hot-bed again, obſerving to water them now and then, as alſo to admit air under the glaſſes every day in proportion to the warmth of the ſeaſon. When the plants are grown about a foot high, they ſhould have a larger ſhare of air, in order to harden them before the winter, but they ſhould not be wholly expoſed to the open air. In the winter theſe plants ſhould be placed in a warm ſtove, and during that ſeaſon they ſhould have very little water given to them, eſpecially in cold weather, leſt it ſhould rot their roots. In the following ſpring theſe plants ſhould be ſhifted again into other pots, at which time you ſhould take away as much as you conveniently can of the old earth from their roots, and afterwards cut off the decayed fibres; then put them into pots filled with the ſame light ſandy earth, and plunge them into the bark-bed again, for theſe plants will not thrive well unleſs they are conſtantly kept in tan: and as they abound with milky juice, they ſhould be ſparingly watered, for they are impatient of moiſture, eſpecially during the winter ſeaſon.

When by any accident the tops of theſe plants are injured, they frequently put out ſhoots from their roots, which, if carefully taken up and potted, will make good plants.

CERCIS. (*Κερκὶς, ſpathula. A name of Theophraſtus's.*) Engl. *Judas-tree.* Fr. *Gainier. Arbre de Judée.* *Lin. gen. n.* 510. *Reich.* 553. *Schreb.* 696. *Juſſ.* 351. Siliquaſtrum. *Tourn.* 414.

Claſſ. 10. 1. Decandria Monogynia.

Nat. order of *Lomentaceæ. Leguminoſæ* Juſſ. *&c.*

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, very ſhort, bell-ſhaped, gibbous below, melliferous; mouth five-toothed, erect, obtuſe.

COR. pentapetalous, inſerted into the calyx, reſembling a papilionaceous corolla.

*Wings: Petals* two, bent upwards, affixed by long claws.

*Standard: Petal* one, roundiſh, clawed beneath the wings, and ſhorter than the wings.

*Keel: Petals* two, converging into a cordate figure, including the organs of generation, affixed by claws.

*Nectary*, a ſtyle-ſhaped gland, below the germ.

STAM. *Filaments* ten, diſtinct, ſubulate, bent downwards, of which four are longer than the reſt, covered. *Anthers* oblong, incumbent, riſing upwards.

PIST. *Germ* linear-lanceolate, pedicelled. *Style* of the length and ſituation of the ſtamens. *Stigma* obtuſe, aſcending.

PER. *Legume* oblong, obliquely acuminate, unilocular.

SEEDS ſome, roundiſh, connected to the ſuperior ſuture.

ESSENTIAL CHARACTER.

*Cal.* five-toothed, gibbous below. *Cor.* papilionaceous. *Standard* ſhort, beneath the wings. *Legume.*

SPECIES.

1. Cercis Siliquaſtrum. *Common Judas-tree.* *Lin. ſpec.* 534. *Reich.* 2. 245. *hort. cliff.* 156. 1. *Thunb. jap.* 178. *Gron. orient.* 131. *Mill. fig.* t. 253.

Arbor judæ. *Dod. pempt.* 786. *Raii hiſt.* 1717. *Bauh. hiſt.* 1. 433.

*Leaves cordate-orbicular ſmooth.*

2. Cercis canadenſis. *Canada Judas-tree. Red Judas-tree.* *Lin. ſpec.* 535. *Reich.* 2. 245. *hort. cliff.* 156. 2. *Gron. virg.* 47. 64. *Duham. arb.* 2. 264. 3. (Siliquaſtrum.)

Arbor judæ americana. *Raii hiſt.* 1718.—Ceratia. *dendr.* 100.

*Leaves cordate pubeſcent, (ovate, acute.)*

DESCRIPTIONS, *&c.*

1. The firſt ſort is by the Spaniards and Portugueſe called the Tree of Love: this riſes with an upright trunk to the height of twenty feet, covered with a dark brown bark, dividing upwards into many irregular branches, with leaves placed irregularly on the branches, on long foot-ſtalks; they are of a pale green on their upper, and of a grayiſh colour on their under ſide, and fall off in autumn. The flowers come out on every ſide the branches, and many times from the ſtem of the tree in large cluſters, ariſing from the ſame point, on ſhort pedunculs; they are of a very bright purple colour, and make a fine appearance, eſpecially when the branches are covered pretty thick with them: they come out in the ſpring with the leaves, and are in full beauty before the leaves have attained half their ſize. The flower is papilionaceous, and having an agreeable poignancy, is frequently eaten in ſalads. When the flowers fall off, the germ becomes a long flat pod, containing one row of roundiſh ſeeds, a little compreſſed; but theſe do not often ſucceed the flowers in this country upon ſtandard trees, for the birds pick off the flowers when fully open; but where they have been planted againſt good aſpected walls, I have ſeen great plenty of the pods, which, in warm ſeaſons, have ripened very well.

Theſe trees are uſually planted with other flowering trees and ſhrubs for ornaments to pleaſure-gardens, and for their ſingular beauty, deſerve a place as well as moſt other ſorts; for when they are arrived to a good ſize, they are productive of flowers, ſo as that the branches are often cloſely covered with them; and the ſingular ſhape of their leaves makes a very pretty variety in the ſummer, and they are ſeldom damaged by inſects. This tree flowers in may, when planted in the full air, but againſt warm walls it is a fortnight or three weeks earlier.

The wood of this tree is very beautifully veined with black and green, and taking a fine poliſh, may be converted to many uſes.

There are two varieties of this tree, one with a white, and the other hath a fleſh-coloured flower, but theſe have not half the beauty of the firſt.—Tournefort alſo mentions one with broader pods and pointed leaves, which I believe is only a variety of this.

[Native of the Levant, Spain, South of France, Italy near Rome, and on the Apennines, Japan, *&c.* Cultivated 1596, by Gerard[1].]

2. The ſecond ſort grows naturally in moſt parts of North America, where it is called Red Bud, I ſuppoſe from the red flower-buds appearing in the ſpring before the leaves come out; this grows to a middling ſtature in the places where it is a native, but in England rarely riſes with a ſtem more than twelve feet high, but branches out near the root. The branches of this are weaker than thoſe of the firſt ſort; the leaves are downy, and terminate in points; whereas thoſe of the firſt are ſmooth, and round at the end, where they are indented. The flowers of this are alſo ſmaller, and do not make ſo fine appearance as thoſe of the firſt; but the trees are equally hardy, and will thrive in the open air very well.

The flowers of this ſort are frequently put into ſalads by the inhabitants of America: and the French in Canada pickle the flowers, but theſe have little flavour. The wood of this tree is of the ſame colour and texture as that of the firſt.

[The young branches die wool of a very fine Nankin colour.—Cultivated 1730[2].]

[1] Hort. Kew. [2] Ibid.

PROPAGATION AND CULTURE.

These plants may be propagated by sowing their seeds upon a bed of light earth, towards the latter end of march, or the beginning of april (and if you put a little hot dung under the bed, it will greatly facilitate the growth of the seeds;) when the seeds are sown, sift the earth over them about half an inch thick; and, if the season prove wet, it will be proper to cover the bed with mats, to preserve it from great rains, which will sometimes burst the seeds, and cause them to rot; the seeds will often remain till the spring following before they come up, so the ground must not be disturbed till you are convinced that the plants are all come up: for some few may rise the first year, and a greater number the second.

When the plants are come up they should be carefully cleared from weeds, and in very dry weather must be now and then refreshed with water, which will greatly promote their growth. The winter following, if the weather is very cold, it will be proper to shelter the plants, by covering them either with mats or dry straw in hard frosts, but they should constantly be opened in mild weather, otherwise they will grow mouldy and decay.

About the beginning of april, you should prepare a spot of good fresh ground, to transplant these out (for the best season to remove them is just before they begin to shoot;) then you should carefully take up the plants, being careful not to break their roots, and plant them as soon as possible, because if their roots are dried by the air, it will greatly prejudice them.

The distance these should be planted, must be proportionable to the time they are to remain before they are again transplanted; but commonly they are planted two feet row from row, and a foot asunder in the rows, which is full room enough for them to grow two or three years, by which time they should be transplanted where they are designed to remain; for if they are too old when removed, they seldom succeed so well as younger plants.

The ground between the plants should be carefully kept clean from weeds in summer, and in the spring should be well dug to loosen the earth, that their roots may extend themselves every way: at that season prune off all strong side branches (especially if you intend to train them up for standard trees,) that their top branches may not be checked by their side shoots, which often attract the greatest part of the nourishment from the roots: and if their stems are crooked, you must place a strong stake down by the side of each plant, and fasten the stem to it in several places, so as to bring it straight, which direction it will soon take as it grows larger, and thereby the plants will be rendered beautiful.

When they have remained in this nursery two or three years, they should be transplanted in the spring where they are designed to remain, which may be in wilderness quarters among other flowering trees, observing to place them with trees of the same growth, so as they may not be overhung, which is a great prejudice to most plants.

[CERCODIA. See *Holoragis*.]

CERFOLIUM. See *Chærophyllum*, [and *Scandix*.

CERITIA. See *Hymenæa*.

CERIUS. See *Cæsar*.]

CERINTHE. (From κηρὸς, wax, or κηρὸν, a honeycomb.—*Κήρινθος is reckoned among summer flowers by Theophrastus.*)

Engl. *Honeywort.* Fr. *Melinet.*

*Lin. gen. n.* 186. *Reich.* 198. *Schreb.* 246. *Tourn.* 56. *Juss.* 130.

Class. 5. 1. Pentandria Monogynia.

Nat. order of *Asperifoliæ*. *Borragineæ* Juss.

GENERIC CHARACTER.

CAL. *Perianth* five-parted; *divisions* oblong, equal, permanent.

COR. monopetalous, bell-form. *Tube* short, thick. *Border* tube-bellied, rather thicker than the tube; *mouth* five-cleft; *throat* naked, pervious.

STAM. *Filaments* five, subulate, very short. *Anthers* acute, erect.

PIST. *Germ* four-parted. *Style* filiform, length of the stamens. *Stigma* obtuse.

PER. none. *Calyx* unchanged.

SEEDS two, bony, glossy, subovate, outwardly gibbous, bilocular.

ESSENTIAL CHARACTER.

*Border* of the corolla tube-bellied. *Throat* pervious. *Seeds* two, bilocular.

SPECIES.

1. Cerinthe major. *Great Honeywort.*
   *Lin. spec.* 195. *Reich.* 395. *hort. cliff.* 48. 2. *Kroeker, fl. silef. n.* 284. *Sabb. hort.* 1. *t.* 12. *Hall. helv. n.* 602. *Ger.* 431. *f.* 1. *emac.* 538. *f.* 1. *Park.* 520.
   C. glabra. *Mill. dict. n.* 2. *fig. t.* 91.
   C. fl. ex rubro purpurascente. *Bauh. pin.* 258.
   β. C. major. *Mill. dict. n.* 1.
   C. flavo fl. asperior. *Bauh. pin.* 258. *Ger. emac.* 538. *f.* 2. *Park.* 521. *f.* 1. *Mart. virg.* 332. *fig.*
   *Leaves stem-clasping, corollas blueish spreading.*
2. Cerinthe minor. *Small Honeywort.*
   *Lin. spec.* 196. *Reich.* 396. *Jacq. austr.* 2. *t.* 124. *Villars dauph.* 2. 448.
   C. minor. *Bauh. pin.* 258. *Raii hist.* 506. *Ger.* 431. *f.* 2. *emac.* 538. *f.* 3. *Park.* 521. *f.* 2. *Clus. hist.* 2. 168.
   β. *Lin. spec. edit.* 1. 137.—fol. emarginatis.
   C. maculata. *Allion. pedem. n.* 178.
   *Leaves stem-clasping entire, corollas acute closed.*

DESCRIPTIONS, &c.

1. [Stems eighteen inches high and more, round, smooth, branching and leafy. Leaves glaucous, becoming blue by age, smooth, without prickles, but ciliated about the edge, dotted with white. Branches leafy, nodding; with flowers among the leaves, hanging on long peduncules. The tube of the corolla is yellow, but the border is purple: the toothlets very short and revolute[a].]

β. Leaves prickly. Corolla yellow.—This is in general a smaller plant than the purple-flowering sort, and the leaves are also smaller. Annual, flowering in june and july. [Haller says it is perennial. There are several other varieties.

This is one of the most common herbs all over Italy—hence Virgil's expression of—*Cerinthæ ignobile gramen*. It is no less common in Sicily; and is found also in the South of France, Switzerland, Germany, and Siberia. Cultivated in 1596, by Gerard[b].

There is abundance of honey-juice in the tube of the flower, for which reason it is much resorted to by bees; this plant therefore is peculiarly proper to be planted near Apiaries.

2. Very nearly allied to the foregoing, but the corolla five-cleft to one-third of the length, whereas that is only five-lobed at the edge. Scopoli makes but one species of them, (*carn. n.* 198.) under the title of C. glabra.

Root-leaves narrowed into a petiole and obovate: all the leaves obtuse, entire, glaucous underneath, usually spotted with white on the upper surface, never ciliated about the edge, or hairy underneath. Flowers solitary, axillary, all turned the same way, and hanging down. Leaflets of the calyx erect, acute, converging into a long tube, growing after the corolla is dropped off, very unequal, the outer broader, ovate and even subcordate, the inner lanceolate or more oblong. Corolla yellow without any spot, contracted at top and bottom, obscurely five-furrowed, deciduous, cleft to the middle: segments oblong-lanceolate, acuminate: throat naked, pervious. The whole plant smooth, and flowering the whole summer. Annual, when sown in the spring, but biennial when sown in autumn: in the wild state therefore biennial[c].

Italy, Germany, Austria, Syria, Switzerland.—Cultivated 1570, by Mr. Hugh Morgan[d].

[a] Haller. [b] Hort. kew. [c] Jacquin. [d] Hort. kew.

β. Differs

β. Differs from the *minor* in ovate, emarginate, wider leaves, constantly spotted, of a deeper glaucous colour; stem erect; corolla yellow, but towards the toothlets purple. Perennial[a].]

PROPAGATION AND CULTURE.

The species of this plant are propagated by seeds, which should be sown soon after they are ripe; for, if they are kept till spring, the growing quality of them is often lost; or at least they lie some months in the ground before they grow; the plants are hardy, and if the seeds are sown in a warm situation, they will endure the winter's cold very well without shelter; these autumnal plants are also much surer to produce ripe seeds than those which are sown in the spring, which are generally late in the season before they flower; and consequently if the autumn should not prove very warm, their seeds would not be perfected.

The plants make a pretty variety for large borders in gardens, where, if they are suffered to drop their seeds, the plants will arise without any further care: so that when a person is once furnished with the several varieties, he need be at no more trouble than to allow each of them a respective place where it may remain, and sow itself; and with this culture, there is a greater certainty of preserving the sorts than in any other management; nor will they perhaps be entirely lost in this way, if it should happen that the season should prevent their ripening seed (as it sometimes proves;) for when great quantities of the seeds have scattered upon the ground, some of them will be buried so deep, in stirring the earth, as not to grow the first year; which, upon being turned up to the air the succeeding year, will come up as well as new seeds.

If the seeds are not taken as soon as they change black, they drop out of the calyx in a short time, and vegetate with the first warm weather.

[CERANTH. See *Onosma* and *Pulmonaria*.

CERATIOLES. See *Pulmonaria*.

CEROPEGIA. (*From κηρος, a candelabre, or lamp-stand.*)

*Lin. gen. n.* 302. *Reich.* 328. *Schreb.* 431. *Juss.* 146.

Class. 5. 1. Pentandria Monogynia.

Nat. order of *Contortæ*. *Apocineæ* Juss.

GENERIC CHARACTER.

CAL. *Perianth* very small, five-toothed, acute, permanent.

COR. monopetalous, with a large globose base which is terminated by a cylindrical oblong tube. *Border* very small, five-toothed, acuminate, with the tip converging, gaping at the sides.

STAM. *Filaments* five, in the base of the corolla, very small, incurved, converging. *Anthers* small.

PIST. *Germ* very small. *Style* scarce any. *Stigmas* two.

PER. *Follicles* two, cylindric, acuminate, very long, erect, unilocular, univalve.

SEEDS numerous, imbricated, oblong, crowned with a pappus.

ESSENTIAL CHARACTER.

Contorted. *Follicles* two, erect. *Seeds* plumose. *Border* of the corolla converging.

SPECIES.

1. Ceropegia Candelabrum.
   *Lin. spec.* 300. *Reich.* 601. *Rheed. mal.* 9. 27. *t.* 16. *Lour. cochinch.* 114.
   *Umbels pendulous, flowers erect.*
2. Ceropegia bifida[b].
   *Lin. spec.* 309. *Reich.* 601. *fl. zeyl. n.* 110.
   *Peduncles two-flowered.*
3. Ceropegia sagittata. *Arrow-leaved Ceropegia.*
   *Lin. fil.* 255. *Reich.* 601. *mant.* 215.
   *Umbels solitary, leaves sagittate.*
4. Ceropegia tenuifolia.
   *Lin. fil.* 255. *Reich.* 602.
   Periploca tenuifolia. *Lin. spec.* 310.

[a] Allioni.

Apocynum fruticescens, &c. *Pluk. mant.* 17. *t.* 335. *f.* 1.

Cynanchum. *Burm. asr.* 1. 15. & *t.* 16. *f.* 1.

Naru-nundi. *Rheed. mal.* 10. 67. *t.* 34.

*Leaves linear-lanceolate.*

5. Ceropegia obtusa.
   *Lour. cochinch.* 114.
   *Leaves blunt, stem twining.*
6. Ceropegia cordata.
   *Lour. cochinch.* 114.
   *Leaves cordate, umbels pendulous.*

DESCRIPTIONS, &c.

1. A twining plant. Stems slender, round, green or reddish. Leaves opposite, ovate, thick, soft, smooth. The peduncle, and at first the flowers hang down, but when open they erect themselves, and being placed in a circle, have the appearance of a set of lamps hanging up. The follicles or seed-vessels hang down[c]. Native of the East-Indies.

2. Stem twining. Leaves opposite, ovate, quite entire. Peduncles axillary, generally two-flowered. Flowers opposite to the peduncle, not reflected, but extended straight out. Native of the isle of Ceylon. Perennial[b].

3. Stem twining, filiform, tomentose. Leaves opposite, on very short petioles, sagittate or cordate-linear, the edges revolute, tomentose on both sides but paler underneath. Umbels axillary, many-flowered, the peduncle shorter than the umbel. Calyx five-parted, linear, tomentose, half the length of the corolla, which is scarlet, subcylindric but less swelling at the base; the divisions very short, mucronate, converging. Native of the Cape. Perennial[a].—Introduced 1775, by Mr. Fr. Masson[f].

4. Stems slender, milky, red, bay or green. Petioles very short, opposite. Flowers axillary, from two to four together, on short peduncles. Within reddish, or reddish brown, on the outside yellowish green.—Native of the East Indies[e].

5. Stem perennial, filiform, smooth. Leaves oblong, quite entire, flat, few, opposite. Flowers pale, like those of the first sort, but on shorter peduncles. Fruits more slender, broken at a right angle as they are, smooth.

Native of Cochinchina with the first, from which it differs more in the leaves than flowers.

6. Stem long, round, climbing, branched, perennial. Leaves quite entire, smooth, opposite, on long petioles. Flowers greenish-yellow, in large hemispherical axillary umbels, on long peduncles. Calyx inferior, five-leaved; leaflets ovate acute small spreading. Corolla five-parted; parts ovate converging. Nectary fleshy upright five-cleft; with ten oblong glands standing round the pistil. Filaments none. Anthers five oblong converging. Germ longish, bifid. Style thick very short. Stigma blunt emarginate.——Native of Cochinchina, climbing in the hedges[f].

CERRI GLANS and CERRIS. See *Quercus*.

CERVARIA. See *Albomanta* and *Trachelium*.

CERUCHIS. See *Spilanthes*.

CERVIANA. See *Pharnaceum*.

CERVICARIA. See *Campanula*.

CERVISPINA. See *Rhamnus*.]

CESTRUM. (*Κεστρον, a hammer.* Κεστρις, *Dioscor.*)

Engl. *Bastard-Jasmin.* Fr. *Cestreau.*

*Lin. gen. n.* 261. *Reich.* 272. *Schreb.* 342. *Juss.* 126. *Gærtn. t.* 77.

Class. 5. 1. Pentandria Monogynia.

Nat. order of *Lutidæ*. *Solanæ* Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, tubular, columnar, obtuse, very short; *mouth* five-cleft, erect, obscure.

COR. monopetalous, funnel-form. *Tube* cylindric, very long, slender; *throat* roundish; *border* flat, plaited, five-cleft; *divisions* ovate, equal.

STAM. *Filaments* five, filiform, attached longitudinally to the tube, emitting a toothlet inwards at the

[b] Host. malab. [c] Linn. zeyl. [d] Linn. mant.
[e] Host. ken. [f] Host. malab. [g] Loureiro.

middle. *Anthers* roundish, quadrangular, within the throat.

PIST. *Germ* cylindric-ovate, length of the calyx. *Style* filiform, length of the *stamens*. *Stigma* thickish, obtuse, scarcely emarginate.

PER. *Berry* ovate, unilocular, oblong.

SEEDS very many, roundish.

OBS. *The genus differs from* Lycium *in having a unilocular berry.*

C. vespertinum *differs in some points.*

ESSENTIAL CHARACTER.

*Cor.* funnel-form. *Stamens* emitting a toothlet from their middle. *Berry* unilocular.

SPECIES.

1. Cestrum nocturnum. *Night-smelling Cestrum.*
*Lin. spec.* 277. *syst.* 227. *Reich.* 523. *hort. cliff.* 491. *Murr. in comm. gott.* 1774. *vol.* v. *p.* 44. *L'Herit. stirp. nov.* 70. *Ait. hort. kew.* 1. 254. *Gaertn. fruct.* 1. 378.
Jasminoides. *Dill. elth.* 183. *t.* 153. *f.* 185.
Syringa. *Pluk. alm. t.* 64. *f.* 3.
Parxu. *Feuill. peruv.* 2. 32. *t.* 32. *f.* 1.
*Filaments toothed; peduncles subracemed equal to the leaf.*

2. Cestrum vespertinum. *Cluster-flowered Cestrum.*
*Lin. syst.* 227. *Reich.* 524. *mant.* 206. *Murr. in comm. gott.* 5. *p.* 41. *t.* 8. *L'Herit. stirp. nov.* 72. *Ait. hort. kew.* 1. 255. *Swartz obs.* 85.
C. confertum. *Mill. dict. n.* 5.
Ixora alternifolia. *Jacqu. amer. pict.* 16. *t.* 177. *f.* 8.
Jasminum. *Plum. amer.* 17. *icon.* 150. *t.* 157. *f.* 1. *Sloan. jam.* 2. 96. *n.* 16. *Raii dendr.* 63. *n.* 11. *Brown. jam.* 173.
*Filaments toothless, tube filiform, peduncles very short.*

3. Cestrum diurnum. *Day-smelling Cestrum.*
*Lin. spec.* 277. *syst.* 227. *Reich.* 525. *hort. cliff.* 491. *Murr. nov. comm. gott.* 5. 44. *L'Herit. stirp. nov.* 74. *Ait. hort. kew.* 1. 255.
Jasminoides. *Dill. elth.* 186. *t.* 154. *f.* 186.
*Filaments toothless, segments of the corolla roundish reflected; leaves lanceolate.*

[4. Cestrum tomentosum.
*Lin. syst.* 228. *suppl.* 150.
*Flowers crowded, sessile, terminal; branches, leaves and calyxes tomentose.*]

5. Cestrum laurifolium. *Laurel-leaved Cestrum.*
*L'Herit. stirp. nov.* 69. *t.* 34. *Ait. hort. kew.* 1. 255.
*Smith spicil. t.* 2. *Mill. dict. n.* 6. (venenatum.)
Laureola. *Pluk. alm.* 209. *t.* 95. *f.* 1. *Raii dendr.* 53. *n.* 1.
*Filaments toothletted or naked; leaves elliptic coriaceous shining very much, peduncles shorter than the petiole.*

[6. Cestrum auriculatum. *Ear-leaved Cestrum.*
*L'Herit. stirp. nov.* 71. *t.* 35. *Ait. hort. kew.* 1. 255.
Hediunda jasminiano flore. *Feuill. it.* 3. 25. *t.* 20. *f.* 3.
*Filaments toothless, stipules lunate.*

7. Cestrum Parqui.
*L'Herit. stirp. nov.* 73. *t.* 36.
Parqui. *Feuill. obs.* 3. 52. *t.* 32.
*Filaments toothletted or naked; floriferous stem paniculed; stipules linear.*

8. Cestrum hirtum.
*Swartz prodr.* 49.
*Flowers subspiked axillary, leaves subcordate ovate acute, underneath with the branchlets rough with hairs.*]

9. Cestrum nervosum.
*Mill. dict. n.* 3.
Jasminoides americanum, lauri folio, fl. albo odorato. *Houst. MSS.*
*Leaves lanceolate, opposite, with transverse nerves; peduncles branching.*

DESCRIPTIONS, &c.

1. It rises with an upright stalk about six or seven feet high, covered with a grayish bark, and divides upward into many slender branches, which generally incline to one side; and are garnished with leaves placed alternate, near four inches long, and one and a half broad, smooth on their upper side, of a pale green, and on their under side they have several transverse veins, and are of a sea-green colour, having short foot-stalks. The flowers are produced at the wings of the leaves, in small clusters, standing upon short peduncles, each sustaining four or five flowers, of an herbaceous colour. They appear in august, but are not succeeded by berries in this country: those which come from America are small, and of a dark brown colour.

It is a native of the island of Cuba, whence Mr. Miller received the seeds by the title of Dama de Noche, or Lady of the Night. It is probably so called, from the flowers sending out a strong odour after sun-set.

It was raised many years past in the curious garden of the Duchess of Beaufort at Badminton, and was thence communicated to several gardens in England and Holland, where it passed by the name of Badminton Jasmin.

Mr. Miller has another sort (C. spicatum, n. 4.) which he says was sent him from Carthagena; [it is probably not different from this: and if so it is found not only in the islands of the West Indies, but on the continent of South America.

2. A tree twelve feet in height. Stem not very strong. Branches round, obscurely tomentose. Leaves alternate, on short petioles, length double the breadth, sharp, quite entire, green on both sides, with cross veins underneath, almost parallel, convex. Spikes axillary, short, subpeduncled; with flowers six to nine, alternate, diverging, subsessile, crowded, separated by an ovate-oblong bracte, a little longer than the calyx which is small and ovate. Corolla longer than the spike, green; tube filiform; border expanding, five-parted; divisions subulate, sharp, one-third shorter than the tube, equal, greenish white. Stamens and pistil the length of the throat[a]. The flowers grow by twos, threes and fours, according to Murray; by fours and fives, according to Swartz. They have no toothlet in the middle of the filaments. The berries are blue. The bark and fruit are fetid[b]. It is a native of the West-Indies, and was cultivated in 1759, by Mr. Miller[c].]

3. This rises with an upright stalk to the height of ten or twelve feet, covered with a smooth light green bark, dividing at top into many smaller branches, with smooth leaves near three inches long, and one and a half broad, of a lively green colour, and the consistence of those of the Spurge Laurel: these are ranged alternately on the branches. Towards the upper part of the shoots come out the flowers from the wings of the leaves, standing in clusters close to the branches; they are very white, shaped like those of the first sort, and smell sweet in the day time, whence it had the appellation of Lady of the Day. The berries of this are smaller than those of the first sort. It flowers in September, october and november.

[According to Murray, the tube of the corolla is funnel-form, and the divisions of the border roundish.

Monf. L'Heritier observes, that it differs from *C. laurifolium* in having longer peduncles, the border of the corolla broader, the filaments naked, the leaves lanceolate not oval, and the flowers white not yellow.]

It is a native of the Havanna, whence the seeds were sent to Mr. Miller by the name of *Dama di Dio*: [but it had been cultivated before in 1732, by Dr. Sherard at Eltham[d].

4. The form of the leaves and flowers is the same as in the third species; but the calyxes, branches, and under surface of the leaves are tomentose; the calyxes are larger; the corollas coloured, with a shorter tube, and a more enlarged border. It was found in South America, by Mutis[e].

5. Stem shrubby, erect, round, with a rugged ash-coloured bark: branches alternate, in the upper

[a] Linn. spec. [b] Murray and Swartz. [c] Hort. kew. [d] Ibid. [e] Linn. suppl.

part somewhat angular, leafy, many-flowered. Leaves alternate, on short foot-ſtalks, ſpreading, elliptic-oblong, a little pointed, entire, obſcurely veined, very ſmooth and ſhining, paler beneath, evergreen: foot-ſtalks ſmooth, dark purple, flat above. Stipules none. Peduncles axillary on the upper part of the branches, in a fort of corymb, erect, ſhorter than the foot-ſtalks, many-flowered. Bractes ſolitary under each flower, ovate, obtuſe, hairy, ſmall, deciduous. Calyx bell-ſhaped, five-toothed, minutely ciliate on the margin, permanent. Corolla four times longer than the calyx: ſegments of the rim obtuſe, ſpreading, pale yellow marked with a gold-coloured ſtreak. Filaments nearly as long as the tube, attached to it by more than half their length, and jointed where they ſeparate from it, frequently alſo furniſhed with a little tooth-like protuberance. Anthers roundiſh, two-lobed, incumbent, half within the tube. Germ ſuperior: ovate, five-channelled, ſmooth, placed on a pretty large five-cornered receptacle. Style a little thickened at the top, ſomewhat ſhorter than the ſtamens. Stigma obtuſe, impreſſed[1].

According to Miller, the ſtem is eight or nine feet high: the leaves are five inches long, and two broad; the flowers emit a diſagreeable odour, and are ſucceeded by oval berries of a violet colour, full of juice; they are reckoned very poiſonous, and have the appellation of Poiſon-berries in Jamaica, whence it was ſent him by Dr. Houſtoun.

[Mr. Miller has well determined and deſcribed it under the name of *C. venenatum*, n. 6. Its fetid ſmell ſeems to imply that poiſonous nature, which he and Sloane attribute to it, and which other plants of this genus poſſeſs[2].

It was cultivated in 1691, in the royal garden at Hampton-court, and flowers in auguſt[3].

6. This is a very fetid ſhrub, two fathoms in height. Stems uſually ſeveral from the ſame root, upright, round, ſomewhat branched, cinereous: branches alternate, upright, warted: ſhoots pubeſcent, green. Leaves alternate, petioled, oblong-lanceolate, acuminate, ſharp at the baſe, entire, ſmooth, flat or ſlightly waved, green but paler underneath, ſpreading, five inches long, twenty lines broad: petioles one-fourth only of the length of the leaves, rounded on one ſide, flat on the other. Stipules axillary, ſurrounding the branchlets, of the ſame form with the leaves. Panicles terminating, conſiſting of axillary ſpikes at the baſe, erect, leafy, bracted, villoſe, three inches long: peduncles alternate, axillary, parulous, many-flowered. Flowers crowded at the top of the peduncle, ſeſſile or ſcarcely pedicelled, herbaceous, eight lines long, and four or five broad. Bractes few, linear, here and there. Calyx five-toothed, ſharp, upright, preſſed cloſe, ſomewhat villoſe, permanent, one line in length. Corolla alſo ſomewhat villoſe on the outſide, inſerted into the receptacle: tube from ſix to eight lines long, ſwelling at top: diviſions of the border linear-lanceolate, very ſharp, two-furrowed, ſpreading. Filaments capillary, very ſhort, without any toothlet, nearly as high as the tube: anthers two-celled, peltate, herbaceous. Germ ſuperior, ovate, obtuſe: ſtigma oblate-ſpheroidal, umbilicate, rolled back at the edge, within the throat or ſcarcely appearing out of it. The berry contains only about five ſeeds.

It differs from *C. veſpertinum*, in having the flowers in panicles, the leaves flat and not converging at the edge, the ſtipules cared, whereas that has none. It differs from the next ſpecies, in having the ſtem leſs panicled, the ſtipules creſcent-ſhaped not linear, the tube of the corolla cylindric not club-ſhaped, and the border linear-lanceolate not truly lanceolate: the filaments alſo are very ſhort and toothleſs.

The natives of Lima in Peru uſe it externally to cleanſe foul ulcers, and internally in the venereal diſeaſe: they look upon it as a pectoral, but it ſeems to be a plant of ſuſpicious character.

[1] Smith. [2] Hill. [3] Hort. kew.

Dombey obſerved it in wet places about Lima. It has been cultivated many years in the Paris garden. It flowers in winter, but ſeldom, and has never borne fruit[1]. Introduced here about 1774[2].

7. This is a fetid ſhrub, one fathom in height. Stems ſeveral, upright, round, with a cinereous cloven bark: branches alternate, patulous, round, with a few tubercles: ſhoots green, ſmooth. Leaves alternate, lanceolate, acuminate, or very ſharp at each end, entire, ſomewhat waved, ſmooth, bright green, the ſame on both ſurfaces, ſpreading, four inches long and one broad: petioles very ſhort, round on one ſide, flattiſh on the other. Stipules axillary, linear-lanceolate, acute, like naſcent leaves. Panicles from the ends of the twigs, upright, leafy, bracted, ſmooth, compoſed of axillary ſpikes, ſimple or compound, patulous, two inches long. Flowers ſeſſile or ſubſeſſile, heaped, duſky yellow, odorous in the night, eight lines long and ſix broad. Bractes linear, acute, under the calyx, ſpreading. Calyx five-toothed, acute, erect, ſmoothiſh, permanent, two lines long. Corolla inſerted into the receptacle, almoſt naked: tube club-ſhaped at the top, eight lines long: ſegments of the border lanceolate, acuminate, ſpreading, and finally turned back. Filaments ſubulate, cloſing the tube with their toothlets, pubeſcent at the baſe, the length of the tube: anthers two-celled, peltate, yellow. Germ ſuperior, roundiſh: ſtigma oblate-ſpheroidal, excavated, large, ſtanding out a little, green. Berry placed upon the calyx, ſtanding far out, oval, two-celled, of a duſky violet colour, four or five lines in length, and three in breadth; containing three or four obſcurely angular, black ſeeds.

Introduced at Paris from ſeeds ſent by Dombey from Chili, where it grows naturally[3].

The foregoing ſpecies are thus diſtinguiſhed by Monſ. L'Heritier. The leaves are evergreen, one-nerved and lucid, in *C. laurifolium* and *diurnum*: reclining and converging upwards on the ſides in *C. auriculatum* and *Parqui*. Theſe two laſt have ſtipules. The peduncles are ſubracemed and elongated in *C. nocturnum*, *auriculatum*, and *Parqui*; ſhorter in *C. diurnum*; ſhorter ſtill in *C. laurifolium*; and in *C. veſpertinum* ſcarcely any. The ſegments of the corolla are roundiſh in *C. diurnum*; ovate in *C. laurifolium*; lanceolate in *C. Parqui* and *nocturnum*; linear in *C. veſpertinum* and *auriculatum*. The genitals are incloſed in *C. laurifolium*, in the reſt the ſtigma is prominent beyond the throat, except in *C. Paryni*, which has it ſcarcely ſtanding out, or but very little. The filaments are toothed in *C. nocturnum*, *laurifolium* and *Parqui*; but not in *C. diurnum*, *veſpertinum* and *auriculatum*.

8. Native of the Weſt-Indies; Jamaica, *&c.*[4]

9. Stem ſhrubby, five or ſix inches high, covered with a brown bark, and dividing at top into very ſmall branches. Leaves about four inches long, and little more than one broad, ſmooth, of a light green. Flowers axillary, towards the ends of the branches, four or five on each peduncle. Tube of the corolla ſwelling at the baſe, juſt above the calyx, but contracting upwards to the mouth, where the border is cut into five broad, flat ſegments; it is white, but without ſcent.

Native of Carthagena in New Spain, whence it was ſent to Mr. Miller.

PROPAGATION AND CULTURE.

The firſt and ſecond ſorts produce their flowers every year in England, the others ſeldom flower here; but as they retain their leaves all the year, they make a pretty variety in the ſtove, during the winter ſeaſon; and when they flower, the branches are commonly well furniſhed at their joints with bunches of flowers.

All theſe plants growing naturally in very hot countries, require to be placed in a warm ſtove, eſpecially in the winter. The firſt and third are hardier than the others; theſe I have kept ſeveral

[1] L'Heritier. [2] Hort. kew. [3] L'Heritier. [4] Swartz.

years in a dry ſtove, with a moderate ſhare of heat in winter, and in the middle of ſummer have ſet them in the open air, in a warm ſituation. With this management I have found them thrive, and produce flowers much better than when they have been placed in a greater heat; I have often endeavoured to keep theſe plants through the winter, in a green-houſe, or a glaſs caſe, without fire, but could never ſucceed; for by the end of January they commonly decayed.

The other ſorts require a larger ſhare of heat, eſpecially when the plants are young; therefore they ſhould be plunged in the tan-bed of the bark-ſtove, otherwiſe they will loſe their leaves in winter, if they are not quite deſtroyed; but after three or four years growth, they will bear to be treated more hardily, provided they are inured to it gradually.

Theſe plants may be propagated from ſeeds, or by cuttings. Thoſe which come from ſeeds are always the moſt vigorous, and ſtraighteſt plants; but as they do not produce ſeeds in England, the other method is generally practiſed, becauſe their ſeeds are rarely brought hither.

The beſt time to plant theſe cuttings is about the end of may, by which time the ſhoots will have had time to recover their ſtrength, after their confinement during the winter ſeaſon. The ſhoots which come out from the lower part of the ſtalks, ſhould always be choſen for this purpoſe. Theſe ſhould be cut about four inches long, and five or ſix of them may be planted in each halfpenny pot; for the cuttings of moſt ſorts of exotic plants will ſucceed better when they are planted in the ſmall pots, than they do in larger, as I have many years experienced. The earth ſhould be freſh and light, but not full of dung: it muſt be preſſed pretty cloſe to the cuttings, and then they muſt be gently watered; after which the pots muſt be plunged into a moderate hot-bed of tanners bark, and every day ſhaded from the ſun. They muſt alſo have freſh air admitted to them in warm weather, and two or three times a week muſt be refreſhed with water. With this management the cuttings will put out roots in five or ſix weeks, when they ſhould be gradually expoſed to the ſun; and when they begin to put out ſhoots, they muſt have a greater ſhare of freſh air admitted to them, to prevent their drawing up weak; and their waterings ſhould be oftener repeated, but given in ſmall quantities, for their young tender fibres will not endure much wet. When they have made good roots, they ſhould be carefully ſhaken out of the pots, and each put into a ſeparate ſmall pot, filled with the ſame ſort of earth as before; then give them ſome water, to ſettle the earth to their roots, and plunge them again into the tan-bed; obſerving if any of their leaves hang down, to ſhade them from the ſun in the middle of the day, until they have taken freſh root; after which they ſhould have a large ſhare of air in warm weather, to ſtrengthen them before winter. Their waterings in the ſummer ſhould be frequent; and if they are ſprinkled all over their leaves, it will waſh and cleanſe them from filth, which will greatly promote their growth; but their roots muſt not be kept too moiſt.

In the autumn the plants of the ſecond and fifth ſorts muſt be removed into the bark-ſtove, and plunged into the tan-bed, where they muſt be treated in the ſame manner as other tender exotic plants; but the firſt and third ſorts may be treated otherwiſe, eſpecially when they have obtained ſtrength; yet the firſt winter they may be managed in the ſame way as the others. There muſt be great care had in watering theſe plants in winter, for they are all (except the third ſort) very impatient of moiſture.

If the ſeeds of theſe are procured from the countries where they grow naturally, they ſhould be ſowed in ſmall pots filled with the earth before directed, and plunged into a moderate hot-bed of tanners bark, giving them now and then a little water. Sometimes the ſeeds will come up the ſame year, but they very often lie in the ground till the ſpring following; ſo that if the plants do not appear in ſix or ſeven weeks after the ſeeds are ſown, they will not come up that ſeaſon; in which caſe the pots may be plunged in the tan-bed of the ſtove, between the other plants, where they will be ſhaded from the ſun, and but little water given them; in this ſituation they may remain till the following ſpring, when they ſhould be removed, and plunged into a freſh hot-bed, which will bring up the plants in a ſhort time, provided the ſeeds were good.

When the young plants are fit to remove, they ſhould be carefully ſhaken out of the pots, and each planted into a ſeparate pot filled with the before-mentioned earth, and plunged into the hot-bed again, and afterward treated in the ſame way as hath been directed for the plants raiſed from cuttings.

CETERACH. See *Aſplenium*.

[CHAA. See *Thea*.

CHÆREFOLIUM. See *Scandix*.

CHÆROPHYLLO SIMILIS. See *Aphanes*.]

CHÆROPHYLLUM. (*From χαιρω & φυλλον; rejoicing, or being very luxuriant in leaves.*

*Lin. gen. n.* 358. *Reich.* 388. *Sebreb.* 490. *Juſſ.* 220. *Chærophylli ſpecies. Tourn.* 160.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Umbellatæ*, or *Umbelliferæ*.

GENERIC CHARACTER.

CAL. *Umbel* univerſal ſpreading; *Partial* nearly equal as to the number of rays.

*Involucre* univerſal none. *Partial* ſubpentaphyllous; *leaflets* lanceolate, concave, reflected, nearly the length of the umbellule. *Perianth* proper obſcure.

COR. univerſal nearly uniform. *Florets* of the diſk abortive.

*Proper* of five petals, heart-inflected; with the point bent in, flattiſh; exterior ones rather larger.

STAM. *Filaments* five, ſimple, length of the umbellule. *Anthers* roundiſh.

PIST. *Germ* inferior. *Styles* two, reflected. *Stigmas* obtuſe.

PER. None. *Fruit* oblong, acuminate, ſmooth, bipartile.

SEEDS two, oblong, attenuated upwards, convex on one ſide, flat on the other.

OBS. *The ſeeds of the diſk frequently are abortive: the fruit varies in ſhape.*

ESSENTIAL CHARACTER.

*Involucre* reflected concave. *Pet.* heart-inflected. *Fruit* oblong, even.

SPECIES.

1. Chærophyllum ſylveſtre. *Wild Cicely* or *Cow-weed. Common Coue-parſley.*

*Lin. ſpec.* 369. *Reich.* 708. *fl. ſuec. n.* 257. *mat. med.* 83. *Hudſ. angl.* 124. *With.* 306. *Curt. lond.* 4. *t.* 25. *Light.* 167. *Jacqu. auſtr.* 2. *t.* 149. *Krock. ſil. ſilef. n.* 450. *Neck. gallob.* 148. *Scop. carn. n.* 366. *Pollich. pal. n.* 298. *Plenck. ic. t.* 208. *Villars dauph.* 2. 642.

Ceretolium. *Hall. helv. n.* 748.—ſylveſtre. *Riv. t.* 44.

Cicutaria vulgaris. *Bauh. hiſt.* 3. 181. *Raii hiſt.* 429. *Mor. hiſt. ſ.* 9. *t.* 11. *f.* 5.

Myrrhis ſylv. ſeminibus lævibus. *Bauh. pin.* 160.

*Stem (upper part) even, ſtriated, joints ſomewhat ſwelling.*

2. Chærophyllum bulboſum. *Tuberous Chervil.*

*Lin. ſpec.* 370. *Reich.* 709. *hort. upſ.* 64. *Jacqu. auſtr.* 1. *t.* 63. *Pollich. pal. n.* 299. *Krock. ſilef. n.* 451. *Plenck, ic. t.* 207.

Myrrhis. *Hall. helv. n.* 752.—ſoetens. *Riv. t.* 50. *Pluk. alm. t.* 206. *f.* 2.

Cicutaria bulboſa. *Bauh. pin.* 161. *Raii hiſt.* 429. *n.* 3.

*Stem even ſwelling at the joints, rough with hairs at the baſe.*

[3. Chærophyllum ariſtatum.

*Lin. ſuſt.* 288. *Thunb. jap.* 119.

*Stem*

*Stem even swelling at the joints, seeds rough with hairs two-awned.*]

4. Chærophyllum temulum. *Wild Chervil. Rough Cow-Parsley.*
*Lin. spec.* 370. *Reich.* 710. *fl. suec. n.* 258. *Hudf. angl.* 125. *With.* 307. *Curt. lond.* 6. *Lightf.* 167. *Relh cantab. n.* 236. *Jacq. austr.* 1. *t.* 65. *Krock. silef. n.* 452. *Leers. herborn. n.* 214. *Pollich. pal. n.* 300. *Neck. gallob.* 147. *Villars dauph.* 2. 646.
C. sylvestre. *Bauh. pin.* 152.
Cerefolium sylv. *Ger.* 867. *emac.* 1038. 2. *Park.* 915. *Raii hist.* 431. *Pet. t.* 25. *f.* 3.
Myrrhis. *Hall. helv. n.* 750. *Riv. t.* 49. *Mor. s.* 9. *t.* 10. *f.* 7.
Anthriscus. *Bauh. hist.* 3. 70.
*Stem rugged, joints swelling.*

5. Chærophyllum hirsutum. *Hairy Chervil.*
*Lin. spec.* 371. *fyst.* 288. *Reich.* 710. *mant.* 356. *hort. cliff.* 101. *n.* 2. *Jacqu. austr.* 2. *t.* 148. *Krock. silef. n.* 453. *Gouan. illustr.* 15. *Leers. herborn. n.* 215. *Villars dauph.* 2. 644.
Myrrhis. *Hall. helv. n.* 751.—palustris. *Riv. pent. t.* 51.
Scandix hirsuta. *Scop. carn. n.* 350.
Cerefolium. *Mor.* 304. *s.* 9. *t.* 10. *f.* 6.
*Stem equal; leaflets gashed, acute; fruits two-awned.*

[6. Chærophyllum aromaticum. *Aromatic Chærophyllum.*
*Lin. spec.* 371. *fyst.* 288. *Reich.* 711. *mant.* 356. *Jacqu. austr.* 2. *t.* 150. *Krock. silef. n.* 455.
Cerefolium. *Bocc. mus.* 2. 29. *t.* 19.
Myrrhis fol. podagrariæ. *Riv. pent. t.* 53.
Angelica. *Bauh. pin.* 156. 4. *prodr.* 82.
*Stem equal; leaflets serrate, entire; fruits two-awned.*

7. Chærophyllum coloratum.
*Lin. fyst.* 288. *Reich.* 711. *mant.* 57. *Jacqu. hort. t.* 51.
Myrrhis perennis lutea daucoides. *Mor.* 302. *s.* 9. *t.* 10. *f.* 6.
*Stem equal; leaves superdecompound; involucels coloured.*]

8. Chærophyllum aureum. *Golden Chærophyllum.*
*Lin. spec.* 370. *fyst.* 288. *Reich.* 712. *mant.* 356. *Jacqu. austr.* 1. *t.* 64. *Krock. silef. n.* 454. *Pollich. pal. n.* 301. *Villars dauph.* 2. 645.
Cerefolium. *Hall. helv. n.* 749. *Rupp. jen.* 3. 282. *t.* 5.
Myrrhis. *Bauh. pin.* 160. *n.* 2. *Lob. ic.* 734. *Mor. umb.* 66. *hist.* 301. *t.* 10. *f.* 2.
*Stem equal; leaflets gashed; seeds coloured, grooved, awnless.*

[9. Chærophyllum scabrum.
*Lin. fyst.* 289. *Thunb. jap.* 119.
*Stem equal; leaves gashed, acute, rough with hairs, peduncles rugged.*

10. Chærophyllum arboreſcens.
*Lin. spec.* 371. *Reich.* 712.
Cicuta arbor virginiana. *Raii suppl.* 257.
*Shrubby.*

DESCRIPTIONS, &c.

1. *Stem* two feet high and upwards, hollow, grooved, generally villoſe and purpliſh, much branched: branches ſuberect, leſs hoary than the ſtem. *Leaves* next the root ſuperdecompound, and very large; ribs hirſute, fiſtuloſe, forming a ſharp angle on the back, hollow in front, and ariſing from a ſhort, ſtriated ſheath; leaflets lanceolate, pointed, deeply and irregularly ſerrate, generally hirſute, but ſometimes ſmooth: leaves of the ſtem and branches ſucceſſively ſmaller, and leſs divided, in other reſpects ſimilar; the upper ones often oppoſite or growing three together, with as many axillary branches. *Umbels* flattiſh when in fruit, but in bloſſom convex; drooping before the expanſion of the flowers. Common peduncle round. Rays ſeven to eighteen, ſlender, round and ſmooth. Leaflets of the involucel five or more, ovate-pointed, ſmooth but ſomewhat hairy on the edges, only half the length of the umbellule, finally reflected. *Petals* flat, obovate, whitiſh; at firſt yellowiſh white; thoſe of the central flowers nearly equal; but the outermoſt of the outer flowers larger, ſubcordate and emarginate. *Seeds* columnar, gloſſy, grooved, blackiſh, without ſcent, and almoſt taſteleſs [a].

Very common in paſtures, orchards, and under hedges, flowering in may, and in warm ſituations in april. Mr. Hudſon marks it as an annual plant; other authors affirm it to be perennial. I ſhould rather ſuppoſe it to be biennial.

Linnæus remarks that this plant indicates a luxuriant ſoil; and ſays that the flowers communicate a green and yellow dye to wool. He alſo affirms that horſes, ſheep and goats are not fond of it, and that cows and ſwine refuſe it. According to Monſ. Villars, horſes will not eat it, even in the ſtable. Mr. Miller ſays that there are few animals who care to eat it except the aſs. On the contrary Mr. Ray informs us that it has the name of *Cow-weed*, becauſe it is a grateful food to cows, in the ſpring, before it runs up to ſtalk; and in confirmation of this, Mr. Wainwright (*With. arr.*) ſays that cows like it ſo well, that when a paſture is over-run with it, as is often the caſe about Dudley, they always turn them in to eat it up. Rabbets are well known to be very fond of this herb; and Mr. Curtis relates, that in time of ſcarcity, the young leaves have been uſed as a pot-herb.—Haller (from Buckwald) ſays that the Dutch uſe it in gangrenes. John Bauhin mentions inſtances of two families having been poiſoned by eating a ſmall quantity of the root.

2. *Root* like the Navew, and biennial. *Stem* from two or three to ſix feet high, with reddiſh-brown ſpots, ſmooth and even at top, hiſpid, with long white hairs below, a little ſwelling at the joints. *Leaves* triply-pinnate, ſharply cut; the upper ſurface ſmooth, the petioles and keel with ſcattered white hairs beneath. Both *umbels* of unequal rays, the *partial* rather convex. *Univerſal involucre* none, or of one or two lanceolate, reflected leaflets: *partial*, of five, ſix, or ſeven, almoſt united at the baſe. Petals white, obcordate, unequal. Some florets of the diſk abortive.—The roots taken up early in the ſpring are eaten boiled, with ſalt, oil and vinegar. Gmelin affirms both theſe and the ſeeds to occaſion vertigoes; but certainly this is not true, at leaſt of the freſh root, many perſons having eaten of that with impunity.—It is frequently ſubſtituted for the *Cicuta* or *Conium maculatum* [b].

Native of Germany, Auſtria, Switzerland, Norway; in hedges and by wood ſides; flowering in june and july.—Cultivated 1739, by Mr. Miller [c].

3. *Stem* round, ſtriated, ſmooth, erect. *Leaves* bipinnate, villous, the ſheaths of the petioles ciliated. *Umbels* terminal, compound. *Involucres* and involucels ſubulate, reflected. *Seeds* oblong, awned with divaricated ſtyles, white-villous.—It differs from *Ch. bulbosum* in having hirt, ſcabrous leaves; and villous, awned ſeeds. Native of Japan [d].

4. Stem but little furrowed, marked with purple ſpots, and ſet with white hairs ſtanding out. Umbels drooping before the time of flowering. Flowers in the middle of the umbellule abortive [e]. *Root* biennial. *Stem* two feet or more in height, branched, round, ſolid. *Leaves* petioled, from a ſheath, ſlightly hirſute, ſoft, flaccid, doubly pinnate, the pinnas ſubovate, obtuſe, and cut into lobes. *Umbel* univerſal, from five to twelve rays, the outermoſt longeſt; partial twice as many. *Involucre*, univerſal moſtly wanting; but ſometimes there are from one to four leaves: partial, conſiſts of about ſix leaflets, or rather is one-leaved, with ſix or eight clefts, which are lanceolate, pointed, reflected. *Corolla*: florets of the diſk rarely abortive, unleſs in thoſe which flower late: petals white, which having the tip bent inwards, appear heart-ſhaped; the outmoſt rather larger. *Seeds* ſmooth, brown, on the inſide hollow, on the outſide faintly and bluntly marked with five grooves, the angles paler. The

[a] Curtis and Stokes in Withering. [b] Linn. and Krocker.
[c] Hort. kew. [d] Thunberg. [e] Linn.

roughneſs, deep purple colour, and ſwelled joints of the ſtem, diſtinguiſh it from the *ſylveſtre*; it alſo flowers a month or ſix weeks later, and is more confined to hedges, being rarely met with in open paſtures. The ſtem being generally ſpotted with purple, it is frequently miſtaken for Hemlock[1].

It has the name of *ſemulum* or *temulentum* from its ſuppoſed narcotic or inebriating quality, which it probably poſſeſſes, like the *ſylveſtre*, only in a very ſmall degree.

5. A pubeſcent plant. *Stem* hollow, round, very rough with ſtiffiſh hairs. *Leaves* decompound, almoſt naked, rugged underneath with ciliate veins: leaflets on each branchlet of the leaves ſcarcely more than five with white dots above the ſerratures. *Umbel* convex, nodding before it flowers. *Involucels* five-leaved, lanceolate, acuminate, green, the length of the umbellule. *Flowers* whitiſh, not radiate; many barren. *Fruits* ſubcylindric, ſlightly ſtriated, terminating in two diſtinct, ſtraight awns, blunted at the tip, more rigid than in *C. aromaticum*[2].

It is perennial, and reſembles the firſt ſort, but the leaves are hairy, and their ſegments broader. Stem four feet high. Corolla in ſome plants red, in others white.

[Native of Switzerland, Germany, Auſtria, Carniola.—Cultivated in 1768, by Mr. Miller[3].

6. Stem and petioles rough with hairs. Leaves of *Ægopodium Podagraria*. Moſt of the flowers male, not radiate. Involucels conſiſting of from ſeven to nine lanceolate, reflected leaflets[4].

Krocker ſays, that the *root* is perennial, branching, aromatic. *Stem* from two to three feet high, hollow, round, ſtriated, dichotomous. *Leaves* pinnate, with the odd leaflet very large; pinnas elliptic, acuminate. *Petioles* ſlender, channelled, proceeding from broad, membranous ſheaths. Native of Luſatia, Miſnia, Auſtria, Sileſia. Flowering in July and auguſt.

Cultivated 1758, by Mr. Miller[3].

7. *Stem* round, hiſſute eſpecially at bottom. *Leaves* of *Selinum Thyſſelinum*, with a few hairs ſcattered about them. *Umbel* as in the firſt ſpecies: involucels ovate, acuminate, yellow as in the *Bupleurum*, the length of the pedicels. Various florets barren. *Fruit* as in the next ſpecies, but more finely ſtriated. It differs from that altogether in the leaflets and hairs[1]. Native of Illyria.

8. A pubeſcent plant. *Stem* angular, ſtriated, ſpotted, rough with hairs at bottom, and not hollow. *Leaves* pale, ſmooth above, hiſſute underneath; the extreme leaflets confluent. *Corollas* white, reddiſh on the outſide. *Fruit* fuſiform-cylindric. *Seeds* yellow, with four obtuſe, remote grooves[5].

According to Krocker, the *root* is perennial, fuſiform, white. *Stem* eighteen inches or more in height. *Partial involucres* of ſeven broad, lanceolate, reflected leaflets. Outer *petals* larger, ſemibifid. Native of the country about Geneva, of Switzerland, Germany, and Auſtria.—Cultivated 1570, by Mr. Penn[3].

9. *Root* fibrous. *Stem* ſomewhat flexuoſe, erect, angular, ſtriated, ſmooth below, hiſſute above, a foot high and more. *Branches* alternate, ſpreading, ſubfaſtigiate, reſembling the ſtem. *Leaves* bipinnate, rough with hairs. *Umbels* terminal. *Petioles* and *pedunoles* very hiſſute with white hairs preſſed to them, and rugged. *Seeds* ovate-oblong. It differs from *Ch. Cerefolium* in having ſmaller leaflets, more divided, with the ſheaths not dilated; and in the umbels being ſmaller. Near Jedo, &c. in Japan, flowering in april and may[6].

10. *Stem* ſhrubby. *Leaves* like thoſe of the firſt ſpecies, large, ſuperdecompound, with the pinnas much expanded, gloſſy, gaſh-ſerrate. *Umbels* thin, white, with a partial involucre: all the florets fertile. Native of Virginia[7].]

[1] Curtis & Relhan. [2] Linn. ſyſt. [3] Hort. kew. [4] Linn. [5] Hort. kew. [6] Linn. mant. [7] Linn. [8] Hort. kew. from Loebel. [9] Thunberg. [10] Linn. ſpec.



PROPAGATION AND CULTURE.

The firſt and fourth ſpecies are common weeds. The others are admitted only into botanic gardens; not being in uſe either for medicine, or in the kitchen. If the ſeeds be permitted to ſcatter, the plants will come up without farther care; or they may be ſown in ſpring, where they are to remain.

[CHÆROPHYLLUM. See *Albamanta* and *Scandix*.

CHAFEWEED. See *Filago*.

CHALCAS PANICULATA. See *Murraya exotica*.

CHALCEOS. See *Echinops*.

CHAMÆBALANUS. See *Arachis*.

CHAMÆBUXUS. See *Polygala*.]

CHAMÆCERASUS. See *Prunus* and *Lonicera*.

[CHAMÆCISSUS. See *Glecoma*.]

CHAMÆCISTUS. See *Andromeda*, *Azalea*, *Ciſtus*, *Portulaca*, *Rhododendron*, *Saxifraga*, and *Turnera*.

CHAMÆCLEMA. See *Glecboma*.

[CHAMÆCRISTA. See *Caſſia*.

CHAMÆ-CURYSOCOME. See *Stæbelina*.]

CHAMÆCYPARISSUS. See *Santolina*.

CHAMÆDAPHNE. See *Andromeda*, *Kalmia*, *Mitchella*, *Rufcus*.

[CHAMÆDRIFOLIA. See *Forſkahlea*.]

CHAMÆDRYS. See *Barrelia*, *Dryas*, *Paderota*, *Rhinanthus*, *Teucrium*, *Verouica*.

[CHAMÆFILIX. See *Aſplenium*.

CHAMÆ-GENISTA. See *Genifta*.

CHAMÆIASME. See *Stellera*.

CHAMÆIRIS. See *Iris*.

CHAMÆLARIX. See *Aſpalathus*.]

CHAMÆLEA. See *Cneorum*, *Clutia*, *Phylica*, and *Fragna*.

CHAMÆLEAGNUS. See *Myrica*.

[CHAMÆLEON. See *Atractylis*, *Carduus*, *Carlina*, *Carthamus*, *Centaurea*, *Cnicus*.

CHAMÆLINUM. See *Linum*.]

CHAMÆMELUM. See *Achillea*, *Anthemis*, *Artemiſia*, *Chryſanthemum*, *Cotula*, *Matricaria*.

CHAMÆMESPILUS. See *Meſpilus*.

[CHAMÆ-MOLY. See *Allium*.]

CHAMÆMORUS. See *Rubus*.

CHAMÆNERION. See *Epilobium*.

CHAMÆ-ORCHIS. See *Ophrys*.

[CHAMÆPERICLYMENUM. See *Cornus*.

CHAMÆPEUCE. See *Stæbelina*.]

CHAMÆPITYS. See *Creſſa*, *Dracocephalum*, *Erica*, *Teucrium*.

CHAMÆRHODODENDRON. See *Azalea* and *Kalmia*.

CHAMÆRHODODENDROS. See *Azalea* and *Rhododendron*.

CHAMÆRIPHES. See *Chamærops*.

CHAMÆROPS. (χαμαὶ & ῥόψ, *a low ſhrub*.)
*Dwarf Palm* or *Palmetto*.
*Lin. Appendix. Palmæ.* n. 1289. *Retzii. App. Palmæ. Schreb.* 1638. *Juſſ.* 39. *Muſ. Cliff.* 10.
Chamæriphes *Pont.* 10. (*Polygamia Dioecia*.)
*Gærtn. t.* 9.

GENERIC CHARACTER.

* *Hermaphrodite Flower.*

CAL. *Spathe* univerſal, compreſſed, bifid; *Spadix* branching; *Perianth* proper tripartite, very ſmall.

COR. tripartite. *Petals* ovate, coriaceous, erect, acute, inflected at the tip.

STAM. *Filaments* ſix, ſubulate-compreſſed, ſcarce cohering at the baſe. *Anthers* linear, twin, growing to the interior ſide of the filaments.

PIST. *Germs* three, roundiſh; *Styles* as many diſtinct, permanent. *Stigmas* acute.

PER. *Drupes* three, globoſe, unilocular.

SEEDS ſolitary, globoſe.

* *Male Flower* in a diſtinct plant, flowering in the ſame manner.

CAL. and COR. as in the Hermaphrodite.

STAM. A gibbous receptacle, ending in ſix *Filaments* not marked by perforations.

All the other particulars as in the Hermaphrodites.

ESSENTIAL CHARACTER.

HERMAPHR. *Cal.* three-parted. *Cor.* three-petalled. *Stam.* ſix. *Piſt.* three. *Drupes* three, one-ſeeded.

MALES. Dioecous, as in the hermaphrodite.

Obs. *Thunberg removes this genus into the claſs Hexandria, and the order Monogynia, along with Muſa.*

SPECIES.

1. Chamærops humilis. *Dwarf Fan-Palm.*
*Lin. ſpec.* 1657. *Reich.* 4. 632. *hort. cliff.* 482. 1.
Chamæriphes major. *Gærtn. fruct.* 1. 26.
Palma minor. *Bauh. pin.* 506.
β. humilis ſ. Chamæriphes. *Bauh. hiſt.* 1. 369. *Raii hiſt.* 1369.
Chamæriphes. *Dod. pempt.* 820. *Pont. anth.* 147. *t.* 8. *Dalech.* 369.
*Fronds palmated, plaited; ſtipes thorny.*
β. Chamærops glabra. *Palmetto Royal.*
*Mill. dict. n.* 2.
*Leaves fan-ſhaped very large; ſtipes ſmooth.*

[2. Chamærops excelſa.
*Lin. ſyſt.* 984. *Thunb. jap.* 130.
Sjuro & Sodio. *Kæmpf. amœn.* 5. 898.
β. Soo Tſiku, v. Sjuro Tſiku. *Kæmpf. amœn.* 5. 898.
*Fronds palmated, nervous, ſerrate; ſtipes unarmed.*

3. Chamærops cochinchinenſis.
*Lour. cochinch.* 657.
*Fronds palmate plaited, ſtipes thorny, ſpathes partial, corollas monopetalous.*]

DESCRIPTIONS, &c.

1. This never riſes with an upright ſtem, but the foot-ſtalks of the leaves riſe immediately from the head of the root, and are armed on each ſide with ſtrong ſpines; they are flat on their upper ſurface, and convex on their under ſide. The centers of the leaves are faſtened to the foot-ſtalk, and ſpread open like a fan, having many foldings, and at the top are deeply divided like the fingers of a hand; when they firſt come out, they are cloſed together like a fan when ſhut, and are faſtened together by ſtrong fibres which run along the borders of the leaves; and when the leaves ſpread open, theſe fibres or ſtrings hang from the ſides and ends; the borders of the leaves are finely ſawed, and have white narrow edgings; they are from nine to eighteen inches long, and near a foot broad in their wideſt part: as the lower leaves of the plants decay, their veſtiges remain, and form a ſhort ſtump above ground, in the ſame manner as our common male Fern does; from between the leaves comes out the ſpadix or club, which ſuſtains the flowers; this is covered with a thin ſpathe or hood, which falls off when the bunches open and divide.

[According to Gærtner, the pericarp conſiſts of three berries, which are ovate-globular, rounded three-cornered at bottom, of a rufous cheſtnut colour, with pale calloſe dots: rind thin, leathery. Seed ſmooth, oblong-ſpheroidal, teſtaceous, with a ſmall lateral tear below the middle.]

It grows naturally in Italy, Sicily and Spain, particularly in Andaluſia, where, in the ſandy land, the roots ſpread and propagate ſo faſt, as to cover the ground in the ſame manner as Fern in England. The leaves of theſe plants are tied together to make beſoms for ſweeping.

1. β. Chamærops glabra of Miller is native of the Weſt-Indies, where it never riſes with a ſtem; the ſtipes are rounder than thoſe of the European Fan-Palm, and have no ſpines on their ſides. When the plants are old, the leaves are three or four feet long, and upwards of two broad, and of a darker green; the folds alſo are broader: ſome of them have put out ſlender bunches of male flowers in England.

There is a dwarf Palm from Carolina very like this, if not the ſame.

[They are alſo uſed for making baſkets, and in thatching. The pith next the root is tender and ſweetiſh, and is ſometimes eaten in deſerts[s].

Cultivated 1731, by Mr. Miller[t].

2. A lofty tree. Leaves ſmooth, green above, pale underneath: lobes cohering at the baſe, linear, cleft at the end, ſerrated, with rough veins. Petioles three-cornered, entire, the length of the leaves. Flowers panicled. Panicle decompoſed, expanding, with floſcules ſeſſile on the extreme pedicels. Beſoms are made of the ſlender netted bark of the trunk.—The variety is a much lower tree. Native of Japan[s].

3. Trunk eight feet high, an inch in diameter, ſtraight, equal. Stipes long, ſlender, with ſhort, ſtraight, ſcattered ſpines. Fronds turbinate, with oblong blunt ſmall many-plaited ſegments. Spadix, ſhort, upright. Spathes lanceolate, ſhorter than the ſpadix. No univerſal ſpathe. Calyx conſiſting of three ſharp, curved, upright, ſhort leaflets. Corolla one-petalled, cup-ſhaped, three-cornered; border trifid, bent in, very ſmall. Filaments very ſhort, placed on the border of the corolla: anthers roundiſh, minute. Drupes ovate, ſmall, juicieſs, not eatable.

Native of the woods of Cochinchina. The fronds are fit for covering houſes, and making umbrellas[s].]

PROPAGATION AND CULTURE.

The dwarf Fan-Palm is commonly propagated here by heads, which ſometimes ſeparate from the main root; if theſe are carefully taken off with fibres and planted, they will grow; but the plants ſo raiſed are not ſo good as thoſe which are produced from ſeeds; ſo that if good ſeeds can be procured, that is by much the better way to propagate it. The ſeeds ſhould be ſown in ſmall pots filled with light ſandy earth, and plunged into a moderate hot-bed of tanners bark; theſe muſt be refreſhed now and then with water. If the ſeeds are freſh, the plants will come up in two months; theſe riſe with a ſingle long-pointed leaf. When they appear they muſt be now and then refreſhed with water, but they muſt not have it in too great plenty. If the plants are not too cloſe to each other in the pots, they will not require to be tranſplanted the firſt year; therefore they ſhould remain in the tan-bed all the ſummer, but in warm weather they muſt have plenty of air admitted to them. In autumn the pots ſhould be removed into the ſtove, and, if they are plunged into the bark-bed the firſt winter, it will greatly forward the growth of the plants. The following ſpring the plants ſhould be carefully turned out of the pots, ſo as to preſerve their roots entire; for all the ſorts of Palms have tender roots, and if theſe be cut off or broken, the plants are frequently killed: then they ſhould be each planted into a ſeparate ſmall pot filled with light, ſandy, undunged earth, and plunged into a freſh hot-bed to encourage their taking root; the following ſummer they ſhould be gradually hardened, by raiſing the glaſſes pretty high, ſo as to admit a large ſhare of air to them, but they ſhould not yet be wholly expoſed to the open air. The autumn following the plants may be placed in a dry ſtove; but as the plants advance and get ſtrength, they may be treated more hardily, and in ſummer placed in the open air in a warm ſituation, and in winter may be preſerved in a warm greenhouſe without artificial heat.

As the plants advance in growth, they ſhould be put into larger pots; but when this is done, there muſt be great care taken that their roots are not cut or broken, nor ſhould they have pots too large. In winter they muſt have but little water, and if they are expoſed to the open air in ſummer, they will not require much, unleſs the ſeaſon proves very warm and dry, in which caſe they may be ſparingly watered two or three times a week.

CHAMÆRUBUS. See *Rubus*.
CHAMÆSYCE. See *Euphorbia*.
[CHAME]ASME. See *Houſtonia*.
CHAMELÆA. See *Daphne, Paullinia, Tragia*.
CHAMIRA. See *Heliophila*.
CHAMOMILLA. See *Matricaria*.
CHAMPACA and CHAMPACAM. See *Michelia*.
CHAMPIGNON. See *Agaricus*.

[s] Thunberg. [t] Loureiro.

CHANDIROBA. See *Feuillea*.
CHANGEABLE ROSE. See *Hibiscus mutabilis*.
CHANSCHENA-POU. See *Bauhinia*.
CHANTARELLE. See *Agaricus*.

CHARA. (χαρὰ, *the joy or delight of the water.*)
*Lin. gen. n.* 1203. *Reich.* 1127. *Schreb.* 1397. *Gærtn. t.* 84. *Juss.* 18. *Vaill. act. gall.* 1719. *t.* 3. Hippuris *Dill. gen.* 2. *Pont. anth.*
Class. 21. 1. Monoecia monandria.
Nat. order of *Inundatæ*. *Naiades* Juss.

GENERIC CHARACTER.

* *Female flower.*

CAL. *Perianth* four-leaved; *leaflets* subulate, erect, permanent: the two opposite exterior ones longer than the others.
COR. none.
PIST. *Germ* turbinate. *Style* none. *Stigma* five-cleft, oblong, deciduous.
PER. *Crust* ovate, unilocular, adhering.
SEED single, ovate, spirally striated.

* *Male flower* at the base of the germ, beyond the calyx.

CAL. none.
COR. none.
STAM. *Filament* none. *Anther* globose, before the germ, beyond the calyx, beneath.

OBS. *The common Chara bears oblong polyspermous berries.* Weis. R.

ESSENTIAL CHARACTER.

MALE. *Cal.* and *Cor.* none. *Anther* before the germ, underneath.
FEM. *Cal.* four-leaved. *Cor.* none. *Stigma* five-cleft. *Seed* one.

SPECIES.

1. Chara tomentosa. *Brittle Chara* or *Stonewort.*
*Lin. spec.* 1624. *Reich.* 4. 89. *fl. suec. n.* 1132. *Hudf. angl.* 398. *With.* 1015. *Hall. helv. n.* 1683. *Raii syn.* 132. *n.* 2.
Equisetum. *Pluk. alm. t.* 29. *f.* 4. *Mor. f.* 15. *t.* 4. *f.* 9.
Hippuris coralloides. *Ger. emac.* 1115. *n.* 7. *Raii hist.* 130.
*Prickles on the stem ovate.*
2. Chara vulgaris. *Common or stinking Chara* or *Stonewort.*
*Lin. spec.* 1624. *Reich.* 4. 90. *fl. lapp. n.* 469. *suec. n.* 1131. *Hudf. angl.* 397. *With.* 1015. *Lightf.* 535. *Relh. cant. n.* 668. *Scop. carn. n.* 1419. *Neck. gallob.* 525. *Pollich pal. n.* 1135. *Hall. helv. n.* 1681. *Weis. crypt.* 32. *Vaill. act.* 1719. 17. *t.* 3. *f.* 1. *Gærtn. fruct.* 2. 25.
Hippuris foetida. *Dill. gif.* 105.
Equisetum foetidum sub aqua repens. *Bauh. pin.* 16. *prodr.* 25. *theatr.* 251. *Bauh. hist.* 3. 731. *Raii hist.* 130. *Park.* 1201. *f.* 10.
*Stems glossy; leaves toothed on the inside.*
3. Chara hispida. *Prickly Chara* or *Stonewort.*
*Lin. spec.* 1624. *Reich.* 4. 90. *fl. suec. n.* 1133. *Hudf. angl.* 398. *With.* 1016. *Lightf.* 535. *Relh. n.* 670. *Fl. dan. t.* 154. *Vaill. act.* 1719. 18. *t.* 3. *f.* 3. *Hall. helv. n.* 1682.
Equisetum. *Pluk. alm. t.* 193. *f.* 6.
*Prickles on the stem capillary, crowded.*
4. Chara flexilis. *Smooth Chara* or *Stonewort.*
*Lin. spec.* 1624. *Reich.* 4. 90. *fl. suec. n.* 1134. *Hudf. angl.* 398. *With.* 1017. *Lightf.* 536. *Pollich pal. n.* 1136. *Hall. helv. n.* 1684. *Vaill. par.* 18. *t.* 3. *f.* 8, 9.
*Joints of the stem unarmed, diaphanous, broader upwards.*

DESCRIPTIONS, *&c.*

These plants, which were ranged by Linneus among the *Cryptogamia Algæ*, have in his later works, on more accurate inspection, been removed to *Monoecia Monandria*.

1. Plant always fleshy-coloured when alive, but when dry it becomes ash-coloured. Stem twisted[a], brittle, and gritty in the mouth, like Corallines. Low and creeping in marshes and where there is little water, but in deep waters growing out in length and erect. The bristles at the joints sometimes naked, sometimes rough with little spines, especially towards the top[b]. According to Weis, the stems much branched, flexible when young, but growing very stiff as they advance in age, and covered with a gritty tufa; when dry they are so brittle as to fly with the least touch. In summer this plant abounds in oblong berries, growing yellow when ripe, and having very small black seeds in them. In salt-marshes, ditches, pools, lakes, &c. in many parts of Europe.—In England Mr. Leonard Buckner first found it three miles beyond Oxford, near Evansham ferry, 1632. Mr. Bowles found it afterwards on a bog near Chillehurst in Kent[c].—Near Bath; Beforsleigh; in the rivulet that runs from Malham Tarn; common in peat ditches in Lancashire and Westmoreland.—Annual, flowering from june to october.

2. The whole plant is yellowish or reddish green. Flowers in the divisions of the stem. Green when fresh, and extremely fetid; glaucous when dry, and very brittle. Leaves sometimes ten or twelve in a whorl[a]. Stem but little branched, six to nine inches long, flexible. Leaves six in a whorl, (eight or nine. *Lightf.*) jointed, the knots with prickles, and often fructifications on the inside. Flowers polygamous, sessile[b].—Ditches and pools. Annual, flowering in july and august.

3. Whitish or pale green when fresh, with spines or prickles usually bent down[b]. Stem twisted spirally, its lower part, branches and lower leaves frequently naked; upper part thick set with prickles. Leaves eight to ten in a whorl. Prickles in bundles, at short distances on the upper side of the leaves, resembling half whorls. Not so fetid as *C. vulgaris*. The whole plant has a strong scent of garlick[c].

In several parts of Europe, on sea coasts, &c. With us by Hinton moor near Cambridge; Ellingham, Norfolk; near Gayton, Staffordshire, in Yorkshire, Lancashire and Westmoreland; East-Lothian, Scotland; and on the turf bogs of Ireland. Annual, flowering from june to october.

4. Stems eight or ten inches long, fistular, tender, smooth, flexible, dull green, pellucid. Leaves smooth, linear, fistular, pointed at the end, from four to ten or twelve in a whorl, often subdivided into two, and sometimes three forks or branches, at a joint near their extremity. The whorls grow in clusters towards the upper part of the stalks, secondary ones being produced from the axils of the primary. Fructifications either single or in pairs, sessile, and placed on the inside, at the angle of the forks: they appear at first like small round yellowish grains, afterwards turn black, and are inclosed within a green transparent pericarp[d].

In several parts of Europe, on the sea coast, &c. With us in lakes, ponds, ditches and bogs: as about Henley near Ipswich, near Knaresborough, near Hornsey, and in several of the Scotch lakes, as Loch Lomond, &c.—Annual; flowering from june to october.

PROPAGATION AND CULTURE.

These plants having no beauty, nor any use that we are acquainted with, and growing only in water, are not cultivated in gardens.

CHARACIAS. See EUPHORBIA.
CHARANTIA. See *Momordica*.
CHARLOCK. See *Sinapis arvensis*.
CHASTE-TREE. See *Vitex*.
CHATE. See *Cucumis*.
CHAW-STICK. See *Gouania*.
CHAYOTA. See *Sechium*.
CHEESE-RENNING or RENNET. See *Galium*.

CHEIRANTHUS. (*From the arabic Keiri; altered by Linneus into a name in the greek form, from* χεὶρ, *a hand, and* ἄνθος, *a flower.*)

[a] Raii syn.
[b] Ger. emac.
[c] Woodw. Mss.
* Stokes in Withering.
[b] Linn. spec.
[c] Woodw. Mss. and Withering.
[d] Lightfoot.

* Linn. spec.

*Lin. gen. n.* 813. *Reich.* 879. *Schreb.* 1091. *Gærtn. t.* 143. *Juſſ.* 238. Leucoium *Tourn.* 107.

Claſſ. 15. 2. Tetradynamia Siliquoſa.

Nat. order of *Siliquoſæ, Cruciformes* or *Cruciferæ.*

GENERIC CHARACTER.

CAL. *Perianth* four-leaved, compreſſed: *leaflets* lanceolate, concave, erect, parallel-converging, deciduous; the two outer gibbous at the baſe.

COR. Four-petalled, cruciform. *Petals* roundiſh, longer than the calyx; claws the length of the calyx.

STAM. *Filaments* ſix, ſubulate, parallel, the length of the calyx: two of them within the gibbous leaflets of the calyx, a little ſhorter than the other four. *Anthers* erect, bifid at the baſe, acute at the tip, and reflected. *A nectareous gland* ſurrounds the baſe of the ſhorter ſtamens on each ſide.

PIST. *Germ* priſmatic, four-cornered, the length of the ſtamens, marked with a tubercle on each ſide. *Style* very ſhort, compreſſed. *Stigma* oblong, two-parted, reflected, thickiſh, permanent.

PER. *Silique* long, compreſſed, the two oppoſite angles obliterated, marked with a toothlet, two-celled, two-valved; furniſhed with the very ſhort ſtyle, and the erect bifid ſtigma.

SEEDS very many, pendulous, alternate, ſubovate, compreſſed, with a membranous edge.

OBS. *The toothlet on each ſide of the germ, in ſome ſpecies is almoſt evaneſcent; in others increaſes.*

ESSENTIAL CHARACTER.

*Germ* with a glandulous toothlet on each ſide. *Cal.* cloſed: with two leaflets gibbous at the baſe. *Seeds* flat.

SPECIES.

1. Cheiranthus eryſimoides. *Wild Wall-flower*, or *Stock.*
   *Lin. ſpec.* 923. *ſyſt.* 597. *Reich.* 3. 262. *ſt. ſuec. n.* 603. *Hudſ. angl.* 287. *Wilb.* 698. *Jacqu. auſtr.* 1. *t.* 74. *Villars dauph.* 3. 314.
   Eryſimum ſylveſtre. *Scop. carn. n.* 630.
   Leucoium luteum ſylveſtre anguſtifolium. *Bauh. pin.* 202. *Mor. ſ.* 3. *t.* 8. *f.* 18.
   L. ſylveſtre. *Cluſ. hiſt.* 1. 299. *Bauh. hiſt.* 2. 873. *f.* 2. *Raii hiſt.* 783. *Ger.* 373. 4. *emac.* 457. 4. *Park.* 625. 2.
   β. Ch. integerrimus. *Mill. dict. n.* 2.
   Heſperis leucoii fol. non ſerrato, ſiliqua quadrangula. *Tourn. inſt.* 223.
   *Leaves lanceolate toothed naked, ſtem erect quite ſimple, ſiliques four-cornered.*
[2. Cheiranthus helveticus. *Swiſs Wall-flower* or *Stock.*
   *Lin. ſyſt.* 597. *Jacqu. hort.* 3. *t.* 9. *Allion. pedem. n.* 988. *t.* 58. *f.* 2. *Hall. helv. n.* 450.
   *Leaves lanceolate toothed naked, ſtem erect, ſiliques four-cornered, acuminated with the ſtyle.*]
3. Cheiranthus alpinus. *Alpine* or *Straw-coloured Wall-flower*, or *Stock.*
   *Lin. ſyſt.* 597. *Reich.* 3. 262. *mant.* 93. *Jacqu. auſtr.* 1. *t.* 75. *Allion. pedem. n.* 986. *t.* 20. *f.* 2. *Villars dauph.* 3. 315.
   C. anguſtifolius. *Mill. dict. n.* 4.
   Heſperis. *Hall. helv. n.* 449. *t.* 14.
   Eryſimum Heſperis. *Scop. carn. n.* 829. *Ger. prov.* 363. *n.* 7.
   Eruca. *Lob. ic.* 205. *f.* 1.
   *Leaves linear entire ſubtomentoſe, ſtem branching.*
[4. Cheiranthus ſtrictus.
   *Lin. ſyſt.* 597. *ſuppl.* 296.
   *Leaves linear acute ſmooth, ſtem ſhrubby erect.*
5. Cheiranthus calloſus.
   *Lin. ſyſt.* 597. *ſuppl.* 296.
   *Leaves lanceolate entire callous, ſtem angular ſhrubby.*]
6. Cheiranthus Cheiri. *Common Wall-flower.*
   *Lin. ſpec.* 924. *Reich.* 3. 263. *hort. cliff.* 334. *mat. med.* 162. *Hudſ. angl.* 287. *Wilb.* 699. *Relh. cant. n.* 481. *Neck. gallob.* 283. *Blackw. t.* 179. *Pet. t.* 45. *f.* 3.
   Leucoium. *Hall. helv. n.* 443.—luteum *Dod. pempt.* 160. *f.* 2. lut. vulgare. *Bauh. pin.* 202. *Mor. ſ.* 3. *t.* 8. *f.* 15.—lut. v. Cheiri fl. ſimplici *Bauh. hiſt.* 2. 872. *Raii hiſt.* 782.
   Viola lutea. *Ger.* 371. 1. *emac.* 456. 1.
   Keiri ſ. L. vulgare luteum. *Park.* 625. 1. *par.* 257.
   β. L. luteum magno flore. *Bauh. pin.* 202. *prodr.* 102. *Raii hiſt.* 782. *Park. par.* 257. *n.* 2.
   γ. L. lut. ferrato fol. flore grandiore. *Bauh. pin.* 202. *prodr.* 102. 2. *Raii hiſt.* 783.
   δ. L. lut. pleno fl. majus & minus. *Bauh. pin.* 202. 6, 7. *Raii hiſt.* 782. *Ger.* 371. 2. *emac.* 456. 2. *Park. par.* 257. *n.* 4, 5, 6, 7.
   *Leaves lanceolate acute ſmooth, branches angular, ſtem ſhrubby.*
[7. Cheiranthus fruticuloſus.
   *Lin. ſyſt.* 597. *Reich.* 3. 263. *mant.* 94.
   Leucoium lut. minus fruticans. *Barr. ic.* 1228.
   *Leaves lanceolate acute ſmooth ſubſerrate, ſtem ſhrubby.*]
8. Cheiranthus chius.
   *Lin. ſpec.* 924. *Reich.* 3. 264. *Murr. prodr.* 166. Heſperis. *Lin. hort. cliff.* 335. *n.* 3. *Dill. elth.* 180. *t.* 148. *f.* 178.
   Leucoium thlaſpios facie. *Herm. par.* 192. *t.* 193. 61.
   *Leaves obovate veinleſs emarginate; ſiliques ſubulate at the tip.*
9. Cheiranthus maritimus. *Dwarf annual, Stock Gilliflower.*
   *Lin. ſpec.* 924. *ſyſt.* 597. *Reich.* 3. 264. *mant.* 568. *amæn.* 4. 280. *Curtis magaz. t.* 166.
   Leucoium marinum parvum fol. virente craſſiuſculo. *Bauh. hiſt.* 2. 877. *Pluk. alm.* 213.
   L. minus fl. violacco. *Barr. ic.* 1127.
   *Leaves elliptic obtuſe naked roughiſh; ſtem diffuſed, rough.*
[10. Cheiranthus ſalinus.
   *Lin. ſyſt.* 597. *Reich.* 3. 264. *mant.* 93.
   *Leaves lanceolate obtuſe quite entire; ſtem erect; anthers included.*]
11. Cheiranthus incanus. *Stock-gilliflower.*
   *Lin. ſpec.* 924. *Reich.* 3. 265. *hort. cliff.* 334. 2. *Mill. illuſtr. ic.*
   Leucoium incano fol. hortenſe. *Bauh. pin.* 200. *n.* 1. 2. 4. 5. 6. 7. *Raii hiſt.* 779. *n.* 1. *Ger.* 372. *f.* 1, 2. & 373. *f.* 3. *emac.* 458. *f.* 1, 2. *Park.* 622. *f.* 1. *par.* 259. *f.* 5. 6. & 263. *f.* 2, 3. *Mor. ſ.* 3. *t.* 8. *f.* 1, 2.
   α. *Queen's Stock-gilliflower. Mill. dict. n.* 6.
   β. Ch. coccineus. *Brompton Stock-Gilliflower. Mill. dict. n.* 7.
   γ. Ch. albus. *White Stock-Gilliflower. Mill. dict. n.* 8.
   δ. Ch. glaber. *Wall-flower-leaved Stock-Gilliflower. Mill. dict. n.* 9.
   L. album odoratiſſimum fol. viridi. *Bauh. pin.* 202. *prodr.* 102. *Raii hiſt.* 781.
   *Leaves lanceolate quite entire obtuſe hoary; ſiliques truncate at the end and compreſſed; ſtem undershrubby.*
12. Cheiranthus feneſtralis. *Cluſter-leaved Stock-Gilliflower.*
   *Lin. ſpec.* 924. *ſyſt.* 598. *Reich.* 3. 265. *dec.* 31. *t.* 16. *Jacqu. hort.* 2. *t.* 179.
   *Leaves crowded in heads recurved waved; ſtem undivided.*
13. Cheiranthus annuus. *Annual Stock-Gilliflower*, or *Ten-week Stock.*
   *Lin. ſpec.* 925. *ſyſt.* 598. *Reich.* 3. 265.
   Leucoium incanum minus. *Bauh. pin.* 200. *Raii hiſt.* 779.
   *Leaves lanceolate ſomewhat toothed obtuſe hoary; ſiliques cylindric acute at the end; ſtem herbaceous.*
14. Cheiranthus littoreus. *Sea Stock-Gilliflower.*
   *Lin. ſpec.* 925. *Reich.* 3. 265.
   L. maritimum anguſtifolium. *Bauh. pin.* 201. *Raii hiſt.* 780. *Cluſ. hiſt.* 1. 298. *f.* 2. *Ger.* 375. 5. *emac.* 461. 5. *Park.* 623. 4.
   *Leaves lanceolate ſomewhat toothed tomentoſe and fleſhy; petals emarginate; ſiliques tomentoſe.*
15. Cheiranthus triſtis. *Dark-flowered Stock-Gilliflower.*

*Lin. spec.* 925. *Reich.* 3. 266. *Gouan. illustr.* 44. *Allion. pedem. n.* 991.

Leucoium. *Barr. ic.* 999. *n.* 1, 2. 1019, & 802. *Bocc. mus.* 148. *t.* 111, *fig. med. inf.*

*Leaves linear subsinuate; flowers sessile, petals waved; stem shrubby.*

[16. Cheiranthus trilobus.

*Lin. spec.* 925. *Reich.* 3. 266.

Leuc. maritimum minimum. *Bauh. pin.* 201. *prodr.* 103.

*Leaves toothed obtuse; calyxes even; siliques knotted sinuate filiform even.*]

17. Cheiranthus tricuspidatus. *Tripid Stock-Gilliflower.*

*Lin. spec.* 926. *Reich.* 3. 267. *Gaertn. fruct.* 2. 296. *Gron. orient.* 80. *Sabb. hort.* 2. *t.* 25.

Leucoium marinum. *Cam. hort.* 87. *t.* 24. *Mor.* 242. *s.* 3. *t.* 8. *f.* 13.

*Leaves lyrate; siliques three-toothed at the tip.*

18. Cheiranthus sinuatus. *Prickle-podded Stock-Gilliflower.*

*Lin. spec.* 926. *Reich.* 3. 267. *Hudf. angl.* 288. *Wilb.* 700.

Leucoium maritimum sinuato fol. *Bauh. pin.* 201.

L. mar. magnum latifolium. *Bauh. hist.* 2. 875. *f.* 876. 1.

L. marinum maximum. *Park.* 622. *Raii hist.* 780.

L. marit. majus. *Lob. ic.* 1. 330. 2. *Ger.* 374. 2. *emac.* 460. 2.

*Leaves tomentose obtuse subsinuate, branch-leaves entire; siliques muricate.*

[19. Cheiranthus Farfetia.

*Lin. syst.* 598. *Reich.* 3. 267. *want.* 94. *Vahl. symb.* 1. 48.

Farfetia ægyptiaca. *Turra Farfet.* 1. *t.* 1.

Lunaria scabra. *Forsk. ægypt.* 117. *n.* 60. *ic.* 1. 16.

β. C. linearis. *Forsk. ægypt.* 120.

*Siliques oval compressed; leaves linear-lanceolate; stem shrubby erect.*

20. Cheiranthus tenuifolius. *Narrow-leaved shrubby Stock-Gilliflower.*

*Ait. hort. kew.* 2. 395. *L'Herit. fl. nov.* 92.

*Leaves filiform quite entire somewhat silky, stem frutescent branched.*

21. Cheiranthus mutabilis. *Broad-leaved shrubby Stock-Gilliflower.*

*Ait. hort. kew.* 2. 395. *L'Herit. fl. nov.* 92. *Curt. magaz. t.* 195.

*Leaves lanceolate acuminate sharply serrate, stem frutescent, siliques peduncled.*

22. Cheiranthus quadrangulus.

*L'Herit. fl. nov.* 91. *t.* 44.

C. montanus. *Pallas it.* 1. 496.

*Leaves linear entire, siliques sessile oblong quadrangular.*

DESCRIPTIONS, *&c.*

1. Root perennial: or, according to some, biennial. Stem usually one (in the wild plant) purplish at bottom, generally quite simple, in height from six to eighteen inches; on the Pyrenees not above two inches high. Leaves narrow, sharpish, sessile, dark green, either linear or oblong-lanceolate, generally quite entire, but the lower ones sometimes toothletted. The stem, leaves, and unripe silique have some roughness.[1].

The flowers are the size of those in *Brassica oleracea*. Calyx green, not sea-green, smooth. Stigma as thick as the pistil, divided to the base into two lobes. Germs tomentose. In appearance it approaches very near to *Erysimum cheiranthoides* and *hieraciifolium*[2].] The leaves resemble those of the common Wall-flower, as do also the flowers, but they have no scent, they are yellow, and in loose spikes or corymbs. [The stems are branched, and bordered; in which it differs from this genus *Cheiranthus*.[3]. It differs in the calyx from Erysimum; in the seeds from Cheiranthus, according to Haller. Italy, Spain, France, Switzerland, Germany, Austria, Hungary, Sweden. England in the osier-holts about Godstow near Oxford, and East-Grinstead in Suffex.] It flowers in june, and ripens its seeds in autumn.

The variety rises with an upright stalk nearly the same height, but does not branch out. The leaves are broader, smoother, and not pointed; they are alternate, sessile, and of a deep green. Native of Hungary and Istria.

Miller is confident that it is different, and makes it a distinct species from the other.

[2. In appearance very like the foregoing, but more shrubby; flowers smaller and having less scent; the seeds twice as large, and the stigma separated from the germ by a style; whereas in the *erysimoides* there is no style whatever.—Root perennial. Stem erect, somewhat angular, eighteen inches high, when young a little villose. Leaves narrow-lanceolate, acute, thickish, usually somewhat rugged, subsessile, obscurely villose, pale green, for the most part quite entire, but sometimes having a few teeth. Racemes corymbed, long and erect. It flowers in may and june, and the seeds ripen in july. Native of Switzerland[4].

3. It very much resembles the first species, but differs in having hoary leaves and a branching stem[5].

The whole plant is roughish. Root biennial. Stem stiffly erect, solitary or few, from one to three feet in height, simple or branching, somewhat angular, slender, firm. Leaves lanceolate-linear, with very short, scarcely conspicuous hairs, sessile, acute; when the flowers are going off, drying up and falling, so as to leave the stem naked. In some individuals the leaves are truly linear, quite entire, almost hoary, and convolute: in others they are much broader, greener, and the lower ones toothed here and there. The stems and branches are produced into very long racemes. The flowers are pale yellow or sulphur-coloured, and have little or no smell. They appear in june and july, and the seeds are perfected in august and september. On banks, walls, &c. in Austria and Provence[6]; Switzerland, and the mountains of Piedmont.—It was cultivated in 1731, by Mr. Miller[7].

4, 5. Found at the Cape by Thunberg[8].

6. Stem woody, a foot high, ascending. Branches angular. Leaves crowded, upright, lanceolate, with few serratures, smooth, concave. Petioles hardly distinct from the leaves. Peduncles four-cornered[9].] On walls it is seldom more than six or eight inches high, with very tough roots and firm stalks, the leaves short and sharp-pointed, and the flowers small; but in gardens it is two feet high, and branches wider; the leaves are broader, and the flowers much larger.

[The principal varieties are, 1. Common dwarf yellow. 2. Large yellow. 3. Large yellow bloody. 4. True Bloody. 5. Narrow-leaved Straw-coloured. 6. Variegated-leaved yellow. 7. Winter. 8. White.—And these are either single or double. Parkinson enumerates seven varieties.—1. Common single. 2. Great single. 3. White. 4. Common double. 5. Pale double. 6. Double red; which is what we now call Bloody. 7. Greatest double yellow; then, as he says, a stranger in England[10].

The common Wall-flower is a native of Switzerland, France, Spain, &c.; and is common on old walls and buildings in many parts of England. It is one of the few flowers which have been cultivated for their fragrancy, time immemorial, in our gardens.

7. Resembles the foregoing very much, but is a lower plant, being only three or four inches high. Branches angular. Leaves subpetioled, acuminate, hardish; the lowest having a few small serratures. Flowers one-eighth of the size of the common Wall-flower, less fragrant, pale yellow; petals roundish, obscurely emarginate. Anthers bluish. Native of Spain[11].

[1] Jacquin. [2] Linn. fuppl. [3] Linn. gener. [4] Jacqu. [5] Lyons in Willd. exam. [6] Host. kew. [7] Parkl. [8] Linn. mantiſ. [9] Thunb. prod. [10] Parkinſ. parad. [11] Jacquin. obſerv. 3.

8. Very nearly allied to the following species. Stem proſtrate at bottom; then oblique, flexuoſe, roundiſh, rough with ſtiff, appreſſed hairs, nine inches high, brittle; branches alternate, ſpreading. Leaves alternate, ovate-lanceolate, generally obtuſe, ending in a long petiole, rugged about the edge, ſerrate here and there, the middle vein prominent beneath. Flowers at the ends of the branches: calyx manifeſtly gibboſe and almoſt conical: claws of the petals of the ſame length with the calyx, white, border obcordate, purpliſh red, paler underneath. Siliques hirſute with appreſſed hairs.—Leaves not emarginate, nor ſo oblong as in Dillenius's figure *.

Native of the iſland of Chios, and Ruſſia.

9. Stems very much branched, divaricated, ſomewhat ſtiff, rugged, with twin appreſſed hairs. Leaves oval-lanceolate, ſomewhat reflected at the tip, green, on rather long petioles, ſtiffiſh: the upper ones obſcurely ſubdentated. Raceme terminal. Calyx cloſed, even. Petals obcordate, red, turning purple. Anthers in the throat of the flower *.]

It ſeldom riſes more than ſix inches in height, [unleſs it be preternaturally drawn up. The native place of growth is the coaſt of the Mediterranean; and therefore it is very improperly called Virginia Stock. Annual.—Cultivated 1739, by Mr. Miller *.

10. Very like the next ſpecies, but only one-eighth of the ſize, the whole very ſmoothly tomentoſe. Stems erect, continuing ſome years. Leaves not toothed in the leaſt. Corolla purple, with a yellowiſh throat. Stigma obtuſe, thickiſh, bifid, and by no means ſlender. It has the ſmell of the Stock Gilliflower.—Salt-marſhes of Siberia and Tartary *.]

11. The Queen's Stock-Gilliflower riſes with a ſtrong ſtalk, which is almoſt ſhrubby, a foot high or more, having oblong, ſpear-ſhaped, hoary leaves, which are frequently waved on their edges, and turn downward at the extremity; from the ſtalk come out many lateral branches, with the ſame ſhaped leaves, but ſmaller; theſe ſide branches are each terminated by a looſe ſpike of flowers, each having a woolly calyx, and four large roundiſh petals, indented at the end. Theſe uſually appear in may and june, but the ſame plants frequently continue flowering moſt part of the ſummer. The ſeeds ripen in autumn, and the plants generally periſh ſoon after; but when any of them grow in dry rubbiſh, they will laſt two or three years, and become ſhrubby; but thoſe with ſingle flowers are not worth preſerving after they have perfected their ſeeds. The flowers of this ſort vary in their colour; ſome are of a pale red, others are of a bright red, and ſome are curiouſly variegated, but thoſe of the bright red are generally moſt eſteemed. If the ſeeds be well choſen, frequently three parts in four of the plants will be double; and as the plants divide into many branches, they make a fine appearance during their continuance in flower.

B. Is known by the title of Brompton Stock-Gilliflower, I ſuppoſe from its having been there firſt cultivated in England. This riſes with an upright, ſtrong, undivided ſtalk, to the height of two feet or more, with long hoary leaves, which are reflexed, and waved on their edges, and at the top form a large head; out of the center of theſe ariſes the flower-ſtalk, which, when the plants are ſtrong, is frequently a foot and a half long, putting out two or three ſhort branches toward the bottom; the flowers of this kind have longer petals, and are formed into a pyramidal ſpike; but thoſe with ſingle flowers are looſely diſpoſed, becauſe the flowers having but few petals, do not fill the ſpike, as thoſe do which are double; for theſe often have ſo many petals, as to render each flower as large and full as ſmall Roſes; and when they are of a bright red, they make a pretty appearance, but the plants of this ſort produce but one ſpike, in which it differs from all the others. This is generally biennial, though many times the plants are preſerved longer; but they are always ſtronger the firſt year of their flowering than they will be after; ſo that the ſeeds are ſown every ſpring, to continue a ſucceſſion of flowering plants.

γ. Is the White Stock-Gilliflower, which is of longer duration than either of the others. I have frequently had theſe plants live three or four years, which have become ſhrubby; their ſtalks have been three feet high, and branched out on every ſide, ſo as to appear like ſhrubs; theſe ſeldom ſend out flower-ſtalks from the center of the plant, but the ſide branches produce the flowers, and divide into ſeveral other. There are always many double flowers riſe from ſeeds of this ſort, when they are well choſen; ſome years I have ſcarce had enough ſingle flowers to preſerve the kind. The varieties of this are few; ſometimes a few of the plants will produce pale fleſh-coloured flowers, and now and then ſome have been purple; and as that ſort of Stock Gilliflower, which is titled the Twickenham Purple, will ſometimes come with flowers variegated with white, I have been inclinable to think theſe two may be varieties of each other; and the rather, becauſe the plants agree with each other in their external habit; for neither of theſe put out their flower-ſtems from the center of the plants, but always on their ſide.

δ. Is known by the name of White Wall-flower, among the gardeners, and floriſts. This riſes with a greeniſh ſtalk a foot high, dividing into many branches. Leaves narrow, ſmooth, lanceolate, of a lucid green, and of thicker conſiſtence than thoſe of the others; they are near three inches long, and about half an inch broad in the middle: the flowers are produced in looſe ſpikes at the end of the branches, are of a pure white, and have a great fragrancy, eſpecially in an evening, or in cloudy weather. There is a variety of it with double flowers. [Linneus obſerves, that the variety with white flowers has the leaves leſs tomentoſe and even green, but not rigid or ſtiff, as in the Wall-flower.

Native of the ſea-coaſts of Spain *.—In Italy, Greece, Candia, and the iſles adjacent *.

The Stock-Gilliflower is of very long ſtanding in the Engliſh gardens. Johnſon gives a figure of the double Stock, which was not in Gerarde's original work, and obſerves that many and pretty varieties of it were kept in the garden of his kind friend Maſter Ralph Tuggye at Weſtminſter: we may conclude therefore that double Stocks were not known in Gerarde's time. The old Engliſh name of Gilliflower, which is now almoſt loſt in the prefix Stock, is corrupted from the French *Giroflier*. Chaucer writes it *Gylofre*; Turner *Gelower* and *Gelyflowre*; Gerarde and Parkinſon *Gilloflower*. Having got thus far from its original orthography, it was eaſily corrupted by thoſe who knew not whence it was derived, into *July-flower*. Pinks and Carnations alſo having the name of Gilliflower, from their ſmelling like the Clove, which is called *Giroſle* in french, from the latin *Caryophyllum*; they were called *Clove-Gilliflowers*, and theſe *Stock-Gilliflowers* for diſtinction. Gerarde ſays they were alſo called *Garnſey Violet* and *Caſtle Gilloflower*.

12. *Stem* ſhrubby, from ſix to eight inches high, nearly the thickneſs of the little finger, ſtraight, rigid, round, covered with leaves, hoary with nap, dividing at top into two or three very ſhort, alternate branches. *Leaves* ſcattered, petioled, lanceolate, bending this way and that, very obtuſe, lacunoſe, tomentoſe, ſomewhat veined, compact, rigid, an inch long. *Petioles* linear, ſhort, ſpreading, very broad, tomentoſe. *Racemes* terminal, two or four, erect, ſtraight, ſimple, naked, the length of the ſtem. *Peduncles* roundiſh, tomentoſe. *Flowers* alternate, nearly the ſize of thoſe in the common Stock; *pedicels* filiform, ſpreading, tomentoſe, the length of the calyx. *Corolla*, petals obcordate, re-

* Mart. pauly. * Linn. mant. * Hort. kew. * Linn. mant. * Linn. * Parkinſon.

flected, channelled, notchletted, purple glittering with gold. *Siliquæ* shorter than in the other species, linear, a little flattiſh, flexuoſe, hoary with nap. It continues three or four years, flowering the ſecond; the third and fourth it puts out branches, which flower the ſame year. This plant is proper to ſtand in windows (whence its trivial name,) on account of its ſmallneſs, and the very grateful odour it exhales, eſpecially in the evening.—The ſeeds were firſt ſown in the Upſal garden in 1753; but it is not known whence they came[1].—It was cultivated here in 1759, by Mr. Miller[2]; and flowers from may to july.]

13. The annual or ten weeks Stock-Gilliflower riſes with a round ſmooth ſtalk about two feet high, dividing into ſeveral branches at top. Leaves lanceolate, hoary, rounded at the end, almoſt oppoſite, or alternate, or three and four together of unequal ſizes. The flowers are produced in looſe ſpikes at the ends of the branches, and are placed alternately: the calyx is large, erect, and ſlightly cut into ſeveral acute parts at the top; the petals are large and heart-ſhaped.

[Linnæus remarks, that the petals of this are emarginate; whereas in the *incanus* they are entire. It grows naturally on the ſea coaſts in the ſouthern countries of Europe[3]; and was cultivated in 1731, by Mr. Miller[4].]

Of this ſort there are the red, purple, white and ſtriped, with ſingle flowers; and the ſame colours with double flowers; which are very great ornaments in the borders of the flower-garden in autumn.

14. *Stem* a foot high, alternately branching, hoary. *Leaves* alternate, channelled, obtuſe. *Flowers* in terminal racemes: petals obcordate, purpliſh, but white at the baſe: ſtamens the length of the tube. *Siliquæ* ſubulate, narrow, equal, not longer than the leaves[5].] The flowers are ſmaller than thoſe of the common Stock, of a bright red at firſt, but fading to a purple. The whole plant is very white; and having woody ſtalks, has the appearance of a perennial plant, but it generally periſhes in autumn. It grows naturally near the ſea coaſt, in the ſouth of France, Spain, and Italy.—[It was cultivated in 1683, by Mr. James Sutherland[6].]

15. This ſort is of humble growth, ſeldom riſing above eight or nine inches high.

[The whole plant is roughiſh, and of a hoary aſh-colour. The bottom leaves have two or three pairs of teeth, and are ſinuated; the branch-leaves have one or two teeth, and the upper ones are quite entire. Flowers alternate in a long raceme. Petals linear, emarginate, green-ſulphur changing to a ſhining purple, with brown veins, and a curled toothletted edge. Siliquæ round, toruloſe, very long, thicker at the end. At night it has a grateful odour, ſomewhat reſembling that of *Geranium triſte*. Native of the ſouth of Europe[7].—Cultivated 1768, by Mr. Miller[8].

16. *Root* annual. *Stems* branching, ſpreading, ſeven or eight inches high, hoary. *Leaves* lanceolate, with one or two pretty deep teeth on each ſide. *Corolla* purple, rather large. *Siliquæ* linear, roundiſh, keeled at the ſutures, knotted with torules on the ſides, acuminated with a long ſubulate tip, and ſmooth[9]. Native of Italy, on the ſea ſhore near Terracina[10].]

17. This is an annual plant, which branches out from the root into many declining ſtalks: the lower leaves are about two inches long, and three quarters of an inch broad, very deeply ſinuated on their edges, and hoary; thoſe upon the ſtalks are of the ſame form, but much ſmaller: the flowers are produced from the ſides of the ſtalks ſingly, and at the top in looſe ſpikes (or racemes); the calyxes are covered with a white down, as are alſo the ends of the branches; the corollas are purple: the pods are two or three inches long, [ſubcylindric; obſcurely knotted where the ſeeds are, terminating at top in three ſubulate cuſpis: partition very ſlender. Seeds ten or twelve in each cell, ovate, compreſſed, beaked, ferruginous-red, not margined[11].]

Native of Barbary. Cultivated 1759, by Mr. Miller[12].]

18. Stalk erect, and the whole plant covered with a white down. Lower leaves broad-lanceolate, obtuſe, alternately indented. Flowers fleſh-coloured, ſucceeded by long, woolly pods.

[Brought out of the iſle of Ree near Rochelle by John Tradeſcant, when the duke of Buckingham was ſent with ſupplies for Monſ. Soubiſe[13]. Gathered by Mr. George Bowles upon the rocks at Aberdovye in Merionethſhire[14]. On the ſandy coaſt of Angleſey about Abermeney-ferry, at Aberdaron in Caernarvonſhire; on the coaſt of Cornwall, &c.[15]. Biennial.

19. *Stem* a foot high, hoary, ſtiff and ſtraight, branching. *Leaves* alternate, ſeſſile, acuminate, quite entire, hoary or ſilveriſh. *Racemes* ſubalateral, oppoſite to the leaves, ſtiff and ſtraight. *Calyx* oblong, green. *Petals* ſad-coloured, linear, rounded, quite entire, oblique, from purpliſh white, obſcurely netted with darker meſhes. *Stamens* ſhorter than the claws of the petals. *Piſtil* ſhorter than the ſtamens. *Siliquæ* oval, from compreſſed flat.—It has the whole herb of *Leucoiodulus Dorycnium*; the flower of *Chiranthus triſtis*; a fruit nearly reſembling that of *Leucoia*. The flowers of a dull colour, ſmelling ſweet only in the night. In its air, it approaches very near to the *Leucoium* of Tournefort referred to among the ſynonyms; but the leaves are linear, acuminate, even and ſtiff.—Egypt and Arabia[16]: obſerved by Forſkael, in the kingdom of Tunis. Turra gave it the name of *Farfetta*, from Farfetti, a noble Venetian.

Introduced 1788, by John Sibthorp, M.D.[17].

β. The variety differs only in having narrow leaves and ſiliques[18].

20. This is a ſhrub, a foot and a half in height; the branches becoming bald at bottom. It is a native of Madeira, and was found there by Maſſon[19]. It was introduced in 1777; and flowers in may and june[20].

21. This alſo is a ſhrub, growing to the height of two or three cubits[21]. It was found by Maſſon in the ſame iſland, was introduced at the ſame time, and flowers from march to may[22].

Its chief merit conſiſts in its early flowering. The ſhowy bloſſoms on firſt opening are white, ſometimes inclined to yellow; in a few days they become purple; hence its trivial name *mutabilis* or changeable[23].

22. This grows a cubit in height, with an herbaceous ſtem, becoming a little ſhrubby at bottom, upright, branched, round: branches alternate, axillary, ſubdecumbent, the younger ones ſcarcely hoary. Leaves alternate, ſeſſile, acute, channelled, one-nerved, thickiſh, ſcarcely pubeſcent, ſpreading, reclined, bright green, three or four inches long, and two or three lines wide. Flowers in terminating, very long, proliferous, ſubdecumbent ſpikes: alternate, ſeſſile, ſulphur-coloured, odorous. Siliquæ ſhort. Seeds not margined. Native of the deſerts of Siberia. Introduced into the Paris garden by the famous Jean Jacques Rouſſeau; and ſince by Demidow[24].]

PROPAGATION AND CULTURE.

1. If the ſeeds be permitted to ſcatter, the plants will come up without care, and will thrive in any ſoil or ſituation, and upon walls or among rubbiſh, as the common Wall-flower.

3. This ſort, when cultivated, grows as large as the common Wall-flower, and makes a finer appearance, the racemes being longer, and the flowers

[1] Linn. dec.
[2] Hort. kew.
[3] Linn.
[4] Hort. kew.
[5] Linn.
[6] Hort. kew.
[7] Allion.
[8] Hort. kew.
[9] Linn. ſpec.
[10] Bauh. prodr.
[11] Gærtner.
[12] Hort. kew.
[13] Park.
[14] Ger. emac.
[15] Ray.
[16] Linn. mant.
[17] Hort. kew.
[18] Forſk.
[19] L'Heritier.
[20] Hort. kew.
[21] Curtis.
[22] L'Heritier.
[23] Hort. kew.
[24] Pall.

growing much closer; having little scent, however, this sort has been much neglected.

6. The common wild Wall-flower, being of a firmer texture, with little sap, is never affected by cold; so that in severe winters, when the plants are frequently killed in the gardens, those upon the walls receive no injury, though they are much more exposed to wind and frost.

The variety of this, with very double flowers, is propagated from slips planted in the spring, which readily take root. Another variety with variegated leaves is not quite so hardy.

The large bloody Wall-flower will frequently rise with double flowers from seeds, if they are carefully saved from such as have five petals; and these double flowers may be increased by slips, but the plants so raised will not produce such large racemes of flowers as those which are propagated by seeds.

The old bloody Wall-flower, the petals of which are shorter and more numerous, approaching to the common double, but much larger, is propagated also by slips; as are likewise all the intermediate varieties, distinguished by florists from the size and colour of the petals.

The Wall-flowers that are single produce seeds in plenty; but the largest and deepest-coloured flowers should always be selected for seeds. These should be sown in april, upon poor undunged soil; and when the plants are fit to remove, they should be transplanted into nursery-beds, at about six inches distance each way, observing to water and shade them until they have taken fresh root; after which they will require no farther care, but to keep them clean from weeds all the summer; and at Michaelmas they may be transplanted into the borders of the flower-garden where they are designed to remain, that the plants may get good roots before the frost comes on. This is the method which is commonly practised with these flowers; but if the seeds are sown upon poor land, where they are designed to remain, and not transplanted, they will thrive, and endure the frost in winter much better than those which are removed; so that upon ruins or rubbish the seeds of these plants may be sown, where they will thrive and continue much longer than in good land; and in such places, if they are properly dispersed, they will be very ornamental, and their flowers having a strong odour, will perfume the air to a considerable distance.

8, 9. The seeds are sown in patches, at two or three different times; the first in autumn, the second at the end of march, and the third at the end of april, or the beginning of may, in the borders of the flower-garden; where they will make a variety, when intermixed with other low-growing annual flowers, for three months. The eighth having little beauty, is not often cultivated, but the ninth is very common.

11. All the varieties of Stock-Gilliflower flower in may and june, at which time they are the greatest ornament to the flower-garden, therefore deserve our care to cultivate them as much as any of the flowery tribe; but in order to have many double flowers, there must be great care taken in the choice of plants for seeds, without which there can be little hopes of having these flowers in perfection. The only sure way of getting many double flowers, is to make choice of those single flowers which grow near many double ones; for I have always found those seeds which have been saved from plants growing in beds close to each other, where there happened to be many double flowers among them, have produced a much greater number of plants with double flowers, than those which have been saved from plants of the same kinds, which grew single in the borders of the flower-garden; so that there should be a small bed of each kind planted on purpose to save seeds in the flower-nursery; or if they are sown there, and the plants thinned properly when they are young, they need not be transplanted: for I have always observed the plants which have come up from scattered seeds, which have not been transplanted, endure the frost much better than those which have been removed; for as these plants send out horizontal roots from the bottom of their stems, which spread near the surface of the ground, so when they are transplanted, the roots are forced downward out of their natural direction; and if their stalks were grown tall before removal, they are generally planted low in the ground, whereby they are apt to rot, if the ground is moist, or the winter should prove wet; therefore where they can be left unremoved, there will be a better chance of their living through the winter; and as these beds need not be of great extent, so when the winter proves very severe, it will not be much trouble or expence to arch the beds over with hoops, and cover them with mats in frosty weather, by which method they may be always preserved.

The ground where these seeds are sown, must not have any dung, for in rich land the plants will grow very vigorous in summer, but frost, or the heavy rains in autumn, will soon destroy them; for these plants will thrive upon rocks or old walls, as was before observed; and in such situations they will live, when all those which are planted in gardens are destroyed. The best time to sow the seeds is about the beginning of may; and if the season should prove dry, it will be proper to shade the beds with mats every day, to prevent the earth from drying too fast; but the covering must be taken off every evening, to admit the dews of night, and they should be gently watered in the evening two or three times a week. When the plants first appear, with their two seed-leaves, they are often attacked by flies, especially in dry hot seasons; therefore to prevent their destroying the plants, the covering should be continued over them during the heat of the day, and the plants frequently refreshed with water, which will keep them in a growing state, and the flies will not infest them; for I have always observed, they never attack any plants unless they have been stunted in their growth: when the plants have got strength, they will be secure from this danger, and the coverings may be removed; after this the plants will require no farther care but to keep them clean from weeds, and to be thinned to the distance of nine inches or a foot, that they may have proper room to grow, and not draw each other up tall and weak. The plants which are drawn out of these beds to thin them, may be planted in the borders of the flower-garden, where they are designed to remain, and the sooner they are removed, when the plants have got six or eight leaves, the more likely they will be to live through the winter.

The farther care of the plants which are left in the beds, will be to cover them in winter with mats; and when they come to flower, all those which are not of good colours, or whose flowers are small, should be drawn out as soon as they appear, that they may not impregnate those which are designed for seeds with their farina; but those with double flowers should by no means be removed, nor should their flowers be cut off, but suffered to fade among the single ones, by which the seeds will be improved; it will also be a sure method of preserving each sort in perfection, to have them separate from each other, in distinct beds; though I think there is no danger of any of the species altering, by the mixture of their farina, but their colours are liable to be changed by it; so that in order to continue those pure, they should not stand too near each other.

There are some who propagate the double Stock-Gilliflowers by slips and cuttings, which will take root when properly managed, but the plants so raised are never so strong as those which come from seeds, their spikes of flowers are always very short, and have not half the beauty; it is not worth while therefore to practise this method, unless for those which cannot be obtained with any certainty from seed.

13. The annual or ten weeks Stock, if sown at three different times, may be continued in succession

P. corn. violaceo flore. *Clus. hist.* 2. 92. 2. *Dod.* 449. 2. *Lob.* 141. 3. *ic.* 1. 272. 1. *Ger. emac.* 367. *f.* 4. *Park.* 262. *f.* 3. *Petiv. t.* 52. *f.* 8.
*Pedunculus one-flowered; leaves pinnatifid linear; stem glossy: siliques three-valved.*

[5. Chelidonium japonicum.
*Lin. syst.* 489. *Thunb. jap.* 221.
*Pedunculus one-flowered; leaves petioled, pinnated, ovate.*

DESCRIPTIONS, *&c.*

1. Stem erect, from a foot to eighteen inches in height, cylindric, a little hairy. Radical leaves in a tuft: stem-leaves alternate, one to each branch, pinnated; segments nearly circular, scalloped, the end one deeply three-parted. Peduncles one-flowered, hairy, with a roundish hoary bractle at the base of each [a]. The juice of the whole plant is saffron-coloured. It approaches to the class Tetradynamia in the cruciform shape of the corolla, and its silique [b]; which however differs essentially, in being one-celled. Linnæus makes the filaments thirty, Pollich twenty-five, and Withering says they are sometimes not more than twenty. It is common in hedges and other shady places, uncultivated grounds, on rubbish, walls, *&c.* flowering from may to july, during which time it is in the greatest perfection for use.

The juice of every part of this plant is very acrimonious. It cures tetters and ringworms. Diluted with milk it consumes white opake spots on the eyes. It destroys warts, and cures the itch. There is no doubt but a medicine of such activity will one day be converted to more important purposes [c].

The root, according to Loureiro, is extremely bitter, and greatly esteemed among the natives of Cochinchina, for a variety of uses in medicine.]

β. The leaves are divided into long narrow segments, which are deeply jagged on their edges; and the petals of the flower are cut into many parts. [Observed plentifully among the ruins of the Duke of Leeds's seat at Wimbleton, by Professor John Martyn [d].

2. The root is perennial according to Scopoli and Allioni, but annual according to others. Miller says biennial. The whole plant is glaucous. Stem strong, near two feet high, much branched. Root-leaves pinnatifid, waved, variously lobed and indented, pinnas gradually larger upwards; hairy on both sides: stem-leaves embracing, deeply indented, rough above, smooth beneath. Branches dichotomous. Peduncles thick, slightly hairy, one or two-flowered. Calyx large, oval, hairy. Petals large, ovate, yellow. Seed-vessels very long (nine or ten inches), variously twisted, rough, terminated by a sagittated stigma [e]. Stamens sixty and upwards. The flowers nod till the day preceding the unfolding of the petals, which fall off on the second day after they are opened [f].

The large and numerous flowers, which, although of short duration, succeed one another in great abundance during most part of the summer, make a fine contrast with the sea-green dew-bespangled leaves, and are a great ornament to our sandy shores. The whole plant abounds in a yellow juice, is fœtid, and of a poisonous quality. It is said to occasion madness. Probably the *Glaucium* of Dioscorides [g].

Sandy soils in Switzerland, France, Italy, Austria, Carniola, Denmark, Virginia; and on the coasts of Britain, frequently within reach of the spray of the sea, as in Norfolk, Suffolk about Dunwich, *&c.* Lancashire, Isle of Wight, Kent, Essex, Wales and Scotland. Flowering from june to august.

3. Plant glaucous. Root spindle-shaped. Root-leaves in a circle, on short petioles; pinnatifid; pinnas alternate, indented at the ends; the upper ones largest, the terminating one broad, blunt, with three or four indentures, hairy. Stem eighteen inches high, slightly hairy, furrowed, dichotomously branched. Stem-leaves pinnatifid, half-stem-clasping, alternate. Peduncles terminating and axillary, slightly hairy, with sometimes one or two leaves, similar to those of the stem, but smaller. Calyx oval, rather pointed. Petals oval, deep orange, veined, with an elliptic purplish spot at the base of each; they soon fall off. Silique very long, nearly straight, terminated by a blunt knob, very hairy [a].

Hungary, Bohemia, Moravia, Austria, about Montpellier, Piedmont, Spain. In England, first observed by Mr. Stillingfleet, in the sandy corn fields of Norfolk. Annual; flowering in july and august.]

β. This variety differs in having broader leaves, not so deeply divided. The whole plant is smooth, and the flowers are larger, but they are of the same colour.

4. [Linnæus suggests that this plant might have been originally produced, by the pollen of a species of *Chelidonium*, impregnating the germs of *Papaver Argemone*; and hence his trivial name of *hybridum*. Root fusiform, slender. Stem erect, a foot high, branched, cylindric, smoothish, having a few expanded bristles. Leaves multifid, smooth, with toothed sharp segments; they are very much like those of *Papaver hybridum*; or, according to Mr. Miller, of Buck's-horn Plantain. Peduncles terminal, cylindric, one-flowered. Calyx hairy. Petals violet, fugacious, seldom lasting above three or four hours. Anthers twin, pale blue. Silique two inches long, a little crooked, bifpid with a few hairs. Stigma three-rayed [b]. Mr. Woodward observes that the root-leaves are petioled: the stem-leaves sessile, once or twice pinnate; divisions linear, nearly equal, smooth. Stem slightly hairy. Peduncles smooth. Calyx oval, slightly hairy. Petals ovate, deep purple. Silique smooth, terminated by a roundish knob [c], marked with three furrows [d].—In the southern countries of Europe. In sandy corn fields between Swaffham and Burwell in Cambridgeshire, and in Norfolk. Annual, flowering in july and august.

5. *Stem* herbaceous, striated, smooth, weak, erect. *Leaves* alternate, unequally pinnate: leaflets three or five, opposite, on very short petioles, ovate-oblong, acute, gashed, unequally serrated with acute ciliated serratures, smooth, pale underneath, an inch or an inch and half in length, the end lobe always larger: petiole like the stem, a finger's length. *Flowers* axillary, solitary, peduncled. *Peduncle* capillary, nearly the length of the leaves. *Calyx* smooth. *Corolla* a little longer than the calyx, yellow. *Filaments* one-fourth of the length of the corolla.—Native of Japan [e].]

PROPAGATION AND CULTURE.

If the seeds of the four first species be permitted to scatter, the ground will be plentifully stored with plants. If a few of them be thrown about in rock-work, they will come up without trouble, and have a good effect. Seeds sown in the autumn will grow with more certainty than in the spring, and come earlier to flower: they should be sown where the plants are to remain, and will require no care but to thin them where they are too close, and to keep them clean from weeds.

There is a variety of the first sort with double flowers, which generally rises the same from seeds; and may also be preserved by parting the roots.

CHELIDONIUM. See *Bocconia*.
——— majus. See *Sanguinaria*.
——— minus. See *Ranunculus Ficaria*.

CHELONE. (From χελώνη, *a Tortoise.*)
*Lin. gen.* n. 748. *Reich.* 806. *Schreb.* 1005. *Gærtn. t.* 54. *Juss.* 137. *Dill. gen.* 11. Anonymos. *Gron. virg.* 71, 72. *Act. par.* 1706. *t.* 3. *p.* 87.
Class. 14. 2. Didynamia Angiospermia.
Nat. order of *Personatæ. Bignoniæ* Juss.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted, very short, permanent: *divisions* erect, ovate.

[a] Pollich. [b] Retham. [c] Withering. [d] Rali syn. [e] Woodw. Mis. [f] Scopoli. [g] Engl. Bot. [a] Woodw. Mis. [b] Lyons in Raft. [c] Woodw. Mis. [d] Linn. [e] Thunberg.

Cor. monopetalous, ringent. *Tube* cylindric, very short. *Throat* inflated, oblong, convex above, flat beneath. *Border* closed, small. *Upper lip* obtuse, emarginate; *lower* almost equal to the upper, very slightly trifid.

Stam. *Filaments* four, hid beneath the back of the corolla; the two sides ones a little longer. *Anthers* incumbent. The *rudiment* of a fifth filament, like the point of a dagger, between the upper pair of stamens.

Pist. *Germ* ovate. *Style* filiform, situation and length of the stamens. *Stigma* obtuse.

Per. *Capsule* ovate, two-celled, longer than the calyx.

Seeds very many, roundish, surrounded with a membranous rim.

Obs. C. pentstemon *differs in some circumstances.*

ESSENTIAL CHARACTER.

*Cal.* five-parted. *Rudiment* of a fifth filament between the upper stamens. *Capf.* two-celled.

SPECIES.

1. Chelone glabra. *White Chelone.*
   *Lin. spec.* 849. *Reich.* 3. 122. *Gærtn. fruct.* 1. 256. *Gron. virg.* 70. 93. 1. *Tourn. act. par.* 1706. 85.
   *Leaves petioled lanceolate serrate, the upper ones oppofite.*
2. Chelone obliqua. *Red Chelone.*
   *Lin. fyst.* 553. *Reich.* 3. 123. *Gron. virg.* 71. 93. 2. *Lour. cochinch.* 382.
   C. glabra β. *Lin. spec.* 849.
   C. purpurea. *Mill. dict. n.* 2. *fig. t.* 93.
   Digitalis mariana. *Raii suppl.* 397. *Pluk. mant. t.* 348. *f.* 4.
   *Leaves petioled lanceolate serrate, all oppofite.*
3. Chelone hirsuta. *Hairy Chelone.*
   *Lin. spec.* 849. *fyst.* 553. *Reich.* 3. 123. *Gron. virg.* 71. 93. 3.
   Digitalis. *Pluk. mant.* 64. 3. *Banist. virg.* 1926.
   *Stem and leaves hirsute.*
4. Chelone Pentstemon.
   *Lin. spec.* 850. *fyst.* 553. *Reich.* 3. 123. *mant.* 415. *Arduin. spec.* 14. *t.* 5.
   Asarina erecta. *Mill. dict. n.* 2. *fig. t.* 252.
   Dracocephalus. *Mor. hist.* 3. 417. *f.* 11. *t.* 21. *f.* 2.
   Digitalis. *Mor. hist.* 2. 479. *f.* 5. *t.* 8. *f.* 6.
   Pentstemon lævigata. *Hort. kew.* 2. 361.
   Cynorynchium. *Pluk. mant.* 62.
   Pentstemon. *Mitch. gen.* 14.
   β. Dracocephalus. *Mor.* 3. 417. *f.* 3. (latifolia.)
   *Leaves stem-clasping; panicle dichotomous.*
[5. Chelone campanulata.
   *Cavan. hisp.* 18. *n.* 27. *t.* 29.
   *Leaves oppofite, seffile, ovate-lanceolate, extremely acuminate, deeply serrate.*]

DESCRIPTIONS, *&c.*

1. The first sort grows naturally in most parts of North America. This is called by Josselin, in his New England Rarities, the Humming Bird-tree. It has a pretty thick jointed root, which creeps under ground to a considerable distance, sending up smooth channelled stalks, which rise about two feet high, with two leaves at each joint, standing opposite without foot-stalks; these are three inches and a half long, and about three quarters of an inch broad at their base, where they are broadest, diminishing gradually to a sharp point; they have small serratures on their edges, which scarcely appear. The flowers grow in a close spike at the end of the stalks; they are white, and have but one petal, which is tubular, and narrow at the bottom, but swells towards the top, almost like the Foxglove flower; the upper side is bent over and convex, but the under is flat, and slightly indented in three parts at the end.

[Cultivated 1730, by Mr. Miller[a].]

2. The second sort was discovered in Virginia by Mr. Clayton, who sent it to England: the roots of this do not creep so far as those of the first, the stalks are stronger, the leaves much broader, and oblique; they are deeply sawed on their edges, and stand upon short foot-stalks[b]; the corolla is of a bright purple colour, and therefore makes a finer appearance than the first sort.

[Cultivated 1732, by Mr. Miller[b].]

3. This approaches to the first sort, but the stalks and leaves are very hairy, and the flower is of a purer white. It flowers at the same time.—Native of New England, whence Mr. Miller received the seeds.

[Jussieu observes that this has a long fifth stamen, with a very villose anther. Perhaps it is only a variety of the next species[c].]

4. Stem cylindric, pubescent;] upright, a foot and half high, putting out several side-branches. Leaves oblong-lanceolate ending in a point. Flowers in short loose spikes from the divisions of the stalks, purple. [Calyx from erect spreading, subequal. Corolla personate; tube the length of the calyx: throat oblong, bellying: gape white: upper lip shorter, obtusely two-parted, reflected; lower trifid, straight, obtuse with reflected sides. Filaments declined, shorter than the gape; a fifth or upper one castrated, bearded towards the tip, incumbent on the lower lip, broader towards the tip[d].

Native of North America. Cultivated by Mr. Miller in 1758[e].

5. The whole plant smooth. Stems round, a foot and half high, purple, wand-like. Leaves stem-clasping, ovate at the base, towards the tip always narrower, one-nerved, deep green above, paler beneath. Flowers in a very long, loose, terminating spike: pedunceles axillary, solitary, opposite; the lower ones bifid and two-flowered, the upper one-flowered. It may perhaps only be a variety of the foregoing.

Native of Mexico. Cultivated in the gardens of Paris and Madrid[f].]

PROPAGATION AND CULTURE.

1. The first sort flowers in august, and when the autumn proves favourable, the seeds will sometimes ripen in England; but as the plants propagate so fast by their creeping roots, the seeds are seldom regarded. The best time to transplant the roots is in autumn, that they may be well established in the ground before the spring, otherwise they will not flower so strong, especially if the season proves dry; but when they are removed in the spring, it should not be later than the middle of march, by which time their roots will begin to push out new fibres. They will thrive in almost any soil or situation, but their roots are apt to creep too far, if they are not confined, and sometimes intermix with those of other plants; and then their stalks stand so far distant from each other, as to make but little appearance; therefore they should be planted in pots, which will confine their roots, so that in each pot there will be eight or ten stalks growing near each other, when they will make a tolerably good appearance. This plant being very hardy, is not injured by cold; but it must have plenty of water in hot weather.

2, 3. The second and third sorts flower at the same time, may be increased in the same way, and require a like treatment.

As these plants flower in the autumn, when there is a scarcity of other flowers, it renders them the more valuable, especially the second sort, whose flowers make a very pretty appearance, when they are strong: and if some of them have a shady situation in the summer, they will flower later.

4. The seeds should be sown in autumn. When the plants are grown strong enough to remove, they should be transplanted into a shady border, which will prevent their flowering the same year; and in the autumn they may be planted in the borders of the flower-garden. The roots seldom last above two or three years.

[Chenopodio-Morus. See *Blitum.*

[a] Hort. kew. [b] Linn. [c] Linn. mant. [d] Hort. kew. [e] Cavanilles.

CHENOLEA.

*Lin. gen. Schreb. n. 406. Thunb. nov. gen. 9.*

Claſſ. 5. 1. Pentandria Monogynia.

Nat. order of *Holoraceæ. Atriplices* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leaſed, globular, ſomewhat fleſhy, five-parted; ſegments bent in.

COR. none.

STAM. *Filaments* five, filiform, from upright bent in, inſerted at the baſe of the calyx, and of the ſame length. *Authers* minute.

PIST. *Germ* ſuperior. *Style* filiform, very ſhort. *Stigmas* two, ſimple, ſubulate, acute, from ſpreading bent back, a little longer than the ſtyle.

PER. *Capſule* round, ſlightly depreſſed, umbilicate, one-celled.

SEED ſingle, roundiſh, bifid at the tip, ſmooth.

ESSENTIAL CHARACTER.

*Cal.* globular, one-leaſed, five-parted. *Capſ.* one-celled, containing one ſmooth ſeed, bifid at the tip.

SPECIES.

1. Chenolea diffuſa.

*Thunb. nov. gen.* 10. *Lin. ſyſt.* 247.

Salſola ſericea. *Ait. hort. kew.* 1. 317.

DESCRIPTION, *&c.*

Stems ſeveral, radical, filiform, herbaceous, diffuſed, ſimple and branched, covered with leaves, purple, ſmooth at bottom, ſubtomentoſe at top, unequal, the ends upright: branches alternate, ſcattered, few, very ſhort. Leaves faſtigiately oppoſite, ſeſſile, ovate-lanceolate, blunt with a point, fleſhy, entire, flat above, convex beneath, frequent, the uppermoſt more approximating and imbricate, from upright ſpreading, ſilvery tomentoſe, longer than the internodes. Flowers axillary, ſolitary or in pairs, ſeſſile in each axil, towards the tips of the branches.

Native of the Cape of Good Hope, on the low coaſt[a]. Cultivated in 1758, by Mr. Miller. It flowers in auguſt and ſeptember[b].]

CHENOPODIUM. (*From χὴν, a goose, and ποὺς; a foot.*)

Engl. *Goose-foot.* Fr. *Patte d'oye.*

*Lin. gen. n.* 309. *Reich.* 337. *Schreb.* 435. *Gærtn. t.* 75. *Tourn.* 288. *Juſſ.* 85.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Holoraceæ. Atriplices* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved, concave, permanent. *Diviſions* ovate, concave, membranaceous on the margin.

COR. none.

STAM. *Filaments* five, ſubulate; oppoſite the leaves of the calyx, and of the ſame length. *Authers* roundiſh, twin.

PIST. *Germ* orbiculate. *Style* two-parted, ſhort. *Stigmas* obtuſe.

PER. none. *Calyx* cloſed, five-cornered, five-angled; (angles compreſſed) deciduous.

SEED ſingle, lenticular, ſuperior.

OBS. *In ſome ſpecies the ſtyle is obſerved to be trifid.*

ESSENTIAL CHARACTER.

*Cal.* five-leaved, five-cornered. *Cor.* none. *Seed* one, lenticular, ſuperior.

SPECIES.

* *With angular leaves.*

1. Chenopodium Bonus Henricus. *Angular-leaved Goſefoot. Engliſh Mercury* or *Allgood, Good-Henry, Good King Harry, Wild Spinach.*

*Lin. ſpec.* 318. *Reich.* 617. *fl. ſuec. n.* 214. *hort. cliff.* 84. 1. *mat. med.* 72. *Huſ. angl.* 104. *With.* 251. *Lightf.* 147. *Curt. lond. 3. t.* 17. *Hall. helv. n.* 1578. *Neck. gallob.* 131. *Pollich pal. n.* 245. *Allion. pedem. n.* 2006. *Villars dauph.* 2. 561. *Krock. fl. ſilef. n.* 369. *Oed. dan. t.* 579. *Peliv. t.* 7. *f.* 12. *Pluck, ic. t.* 164.

Mercurialis. *Blackw. t.* 311.

Lapathum unctuoſum. *Baub. pin.* 115. *n.* 6. *Park.* 1225. *f.* 6.

Bonus Henricus. *Baub. hiſt.* 2. 965. *f.* 2. *Trag.* 317. *Ger.* 259. *emac.* 329.

Blitum perenne Bonus Henricus dictum. *Mor.* 2. 599. *ſ.* 5. *t.* 30. *f.* 1. *Raii ſyn.* 156. *hiſt.* 195.

*Leaves triangular-ſagittate quite entire; ſpikes compound leafleſs axillary.*

[2. Chenopodium urbicum. *Upright Goſefoot.*

*Lin. ſpec.* 318. *Reich.* 617. *fl. ſuec. n.* 215. *Huſ. angl.* 104. *With.* 252. *Relh. cant. n.* 196. *Raii ſyn.* 155. *n.* 11. *Pet. brit. t.* 8. *f.* 8. *Pollich pal. n.* 246. *Buxb. hal.* 69. *ult. t.* 1. *Krock. ſilef. n.* 370. *Villars dauph.* 2. 564.

*Leaves triangular, ſomewhat toothed; racemes crowded, very ſtraight, approximating to the ſtem, and very long.*

3. Chenopodium Atriplicis. *Orach* or *purple Goſefoot.*

*Lin. ſyſt.* 261. *ſuppl.* 171.

C. purpuraſcens. *Jacqu. hort.* 3. *t.* 80.

*Leaves deltoid coloured beneath; ſtem erect.*

4. Chenopodium rubrum. *Red Goſefoot.*

*Lin. ſpec.* 318. *Reich.* 617. *fl. ſuec. n.* 217. *mat. med.* 73. *hort. cliff.* 85. 7. *Huſ. angl.* 105. *With.* 252. *Lightf.* 148. *Relh. n.* 197. *Hall. helv. n.* 1583. *Neck. gallob.* 131. *Pollich pal. n.* 247. *Krock. ſilef. n.* 371. *Gærtn. fruct.* 1. 360.

Atriplex ſylveſtris latifolia. *Baub. pin.* 119. *Mor. t.* 31. *f.* 2. *Raii hiſt.* 198.

Pes anſerinus. *Dalech. t.* 542. *Fuchſ. t.* 653. *Baub. hiſt.* 2. 975. *f.* 2. *Dod.* 616. 1. *Ger. emac.* 328. *f.* 1, 2. *Park.* 749. *f.* 8. *Peliv. brit. t.* 8. *f.* 6.

*Leaves cordate-triangular bluntiſh toothed, racemes erect compound ſomewhat leafy ſhorter than the ſtem.*

5. Chenopodium murale. *Wall* or *Nettle-leaved Goſefoot.*

*Lin. ſpec.* 318. *Reich.* 618. *fl. ſuec. n.* 216. *hort. cliff.* 85. 8. *Huſ. angl.* 105. *With.* 253. *Curt. lond. n.* 61. *Lightf.* 148. *Pollich pal. n.* 248. *Neck. gallob.* 130. *Berg. phyt. t.* 137. *Krock. ſilef. n.* 372. *Villars dauph.* 2. 562.

Atriplex ſylveſtris latifolia acutiore folio. *Baub. pin.* 119. *Pet. brit. t.* 8. *f.* 5. *Raii hiſt.* 197. *n.* 9.

A. dicta pes anſerinus alter ſ. ramoſior. *Baub. hiſt.* 976. *f.* 1.

*Leaves ovate-ſhining toothed ſharp, racemes branched naked.*

6. Chenopodium ſerotinum. *Fig-leaved Goſefoot.*

*Lin. ſpec.* 319. *Reich.* 618. *amæn.* 4. 309. *Huſ. angl.* 106. *With.* 253. *Hall. helv. n.* 1582.

Blitum ficus folio. *Raii ſyn.* 155. *Pet. brit. t.* 8. *f.* 3.

*Leaves deltoid ſinuate-toothed wrinkled ſmooth uniform, racemes terminal.*

7. Chanopodium album. *Common* or *white Goſefoot.*

*Lin. ſpec.* 319. *Reich.* 618. *fl. ſuec. n.* 218. *vir. cliff.* 22. *hort. cliff.* 85. 6. *Huſ. angl.* 106. *With.* 253. *Lightf.* 148. *Curt. lond.* 2. 15. *Hall. helv. n.* 1579. *Neck. gallob.* 128. *Pollich pal. n.* 549. *Blackw. t.* 553. *Krock. ſilef. n.* 373. *Villars dauph.* 2. 562.

Atriplex ſylveſtris. *Fuchſ. t.* 119. *Baub. hiſt.* 2. 972. 1. *Raii hiſt.* 197.

A. vulgaris. *Ger.* 257. 4. *emac.* 326. 6. *Pet. brit. t.* 8. *f.* 2.

*Leaves rhomboid-triangular eroſe entire behind, uppermoſt oblong; racemes erect.*

8. Chenopodium viride. *Green Goſefoot.*

*Lin. ſpec.* 319. *ſyſt.* 262. *Reich.* 619. *fl. ſuec. n.* 219. *With.* 254. *Curt. lond.* 2. 16. *Lightf.* 149. *Hall. helv. n.* 1580. *Pollich pal. n.* 250. *Krock. ſilef. n.* 374. *Scop. carn. n.* 280.

C. album. β. *Huſ. angl.* 106.

C. opulaceum. *Neck. gallob.* 130.

C. ſylveſtre, opuli fol. *Vaill. par. t.* 7. *f.* 1.

Blitum fol. ſubrotundo. *Pet. brit. t.* 8. *f.* 4.

*Leaves rhomboid tooth-ſinuate, racemes branched ſomewhat leafy.*

[a] Thunberg. [b] Hort. kew.

9. Chenopodium hybridum. *Baſtard Gooſefoot.*
*Lin. ſpec.* 319. *Reich.* 619. *fl. ſuec. n.* 220. *hort. cliff.* 85. 9. *Hudſ. angl.* 105. *With.* 255. *Curt. lond.* 4. 23. *Hall. helv. n.* 1581. *Neck. gallob.* 129. *Pollich pal. n.* 251. *Krock. ſileſ. n.* 375. *Lour. cochinch.* 174. *Villars dauph.* 2. 563.
C. ſtramonii folio. *Vaill. par. t.* 7. *f.* 2. *Raii ſyn.* 154. *Pet. brit. t.* 8. *f.* 7.
C. ſ. Pes anſerinus 2. *Tabern.* 428.
Atriplex ſylveſtris major, anguloſo ſol. *Barrel. ic.* 540.
*Leaves cordate angular-acuminate, racemes branching naked.*]

10. Chenopodium Botrys. *Cluſter* or *Cut-leaved Gooſefoot* or *Oak of Jeruſalem.*
*Lin. ſpec.* 320. *Reich.* 620. *hort. cliff.* 84. 3. *upſ.* 55. 5. *mat. med.* 73. *Hall. helv. n.* 1585. *Villars dauph.* 2. 563. *Krock. ſileſ. n.* 376. *Allion. pedem. n.* 2016. *Blackw. t.* 314. *Plenck, ic. t.* 165.
Botrys. *Dod. pempt.* 34. *Fuchſ.* 179. *Matth.* 853. *Camer. epit.* 598. *Bauh. hiſt.* 3. 298. *Raii hiſt.* 196. *Ger.* 950. *f.* 1. *emac.* 1108.——vulgaris. *Park.* 89.——ambroſioides vulg. *Bauh. pin.* 138.
*Leaves oblong ſinuate, racemes naked multifid.*

11. Chenopodium ambroſioides. *Mexican Gooſefoot*, or *Oak of Cappadocia.*
*Lin. ſpec.* 320. *Reich.* 620. *hort. cliff.* 85. 4. *upſ.* 56. *Plenck, ic. t.* 168.
Botrys ambroſioides mexicana. *Bauh. pin.* 138, 516. *Raii hiſt.* 196.
β. amèricana. *Park.* 89. *n.* 2.
Atriplex odora ſ. ſuaveolens Americana Mexicoanave. *Mor. hiſt.* 2. 605. *ſ.* 5. *t.* 31. *f.* 8.
β. C. fruticoſum. *Mill. dict. n.* 6.
C. ambroſioides fruticoſum mexiocanum. *Boerh. ind.* 2. 90.
*Leaves lanceolate toothed, racemes leafy ſimple.*

12. Chenopodium multifidum. *Buenos-Ayres Gooſefoot.*
*Lin. ſpec.* 320. *Reich.* 620. *Dill. elth.* 78. *t.* 66. *f.* 77.
*Leaves multifid, ſegments linear; flowers axillary ſeſſile.*

[13. Chenopodium anthelminticum. *Wormſeed Gooſefoot.*
*Lin. ſpec.* 320. *Reich.* 621. *mat. med.* 73. *Kalm. canad.* 2. 283. *Dill. elth.* 77. *t.* 66. *f.* 76. *Plenck, ic. t.* 166.
*Leaves ovate-oblong toothed, racemes leafleſs.*

14. Chenopodium glaucum. *Oak-leaved Gooſefoot.*
*Lin. ſpec.* 320. *Reich.* 621. *fl. ſuec. n.* 221. *xatr. cliff.* 22. *hort. cliff.* 85. 5. *Hudſ. angl.* 106. *With.* 255. *Hall. helv. n.* 1584. *Pollich pal. n.* 252. *Krock. ſileſ. n.* 377. *Villars dauph.* 2. 563.
C. anguſtifolium laciniatum minus. *Tourn. inſt.* 506. *Raii ſyn.* 155.
Atriplex ang. lacin. *Bauh. hiſt.* 2. 472. *t.* 473.
A. ſylveſtris ſecunda. *Tabern. ic.* 427.
Blitum quercus folio. *Pet. brit. t.* 8. *f.* 1.
*Leaves ovate-oblong repand, racemes naked ſimple glomerate.*]

** *With ſimple leaves.*

15. Chenopodium Vulvaria. *Stinking Gooſefoot.*
*Lin. ſpec.* 321. *Reich.* 621. *fl. ſuec. n.* 222. *mat. med.* 74. *Woodv. med. bot.* 394. *t.* 145. *hort. cliff.* 84. 2. *Hudſ. angl.* 107. *With.* 255. *Lightf.* 149. *Relh. n.* 203. *Hall. helv. n.* 1577. *Neck. gallob.* 128. *Pollich pal. n.* 253. *Villars dauph.* 2. 564. *Krock. ſileſ. n.* 378. *Allion. pedem. n.* 2014. *Plenck, ic. t.* 167.
C. olidum. *Curt. lond.* 5. *t.* 20.
Atriplex foetida. *Bauh. pin.* 119. *Bauh. hiſt.* 2. 974. *t.* 975. *f.* 1. *Mor.* 2. 605. *ſ.* 5. *t.* 31. *f.* 6.
A. olida. *Ger.* 258. *emac.* 327. *Park.* 749. *f.* 9. *Raii hiſt.* 198. *Pet. brit. t.* 7. *f.* 11. *Blackw. t.* 100.
Vulvaria. *Dalech. hiſt.* 543. *Tabern.* 428.
Garoſmus. *Dod.* 616. 2. *Lob. obſ.* 128. 4.
*Leaves quite entire rhomboid-ovate, flowers conglomerate axillary.*

[16. Chenopodium polyſpermum. *Round-leaved Gooſefoot, Upright Blite*, or *Allſeed.*
*Lin. ſpec.* 321. *Reich.* 621. *fl. ſuec. n.* 223. *Hudſ. angl.* 107. *With.* 256. *Curt. lond.* 2. & 17. *Lightf.* 150. *Hall. helv. n.* 1576. *Neck. gallob.* 128. *Pollich pal. n.* 254. *Krock. ſileſ. n.* 379. *Scop. carn. n.* 279. *Villars dauph.* 2. 564.
C. betæ folio. *Tourn. inſt.* 506. *Raii ſyn.* 157.
Blitum ſol. ovatis. *Lin. hort. cliff.* 28.—polyſpermum. *Bauh. pin.* 118. *Park.* 753. *t.* 754. *f.* 3.——ſylveſtre. *Camer. epit.* 237.—majus polyſp. *Mor.* 2. 599. *t.* 30. *f.* 6.—erectius, ſ. 3. *Tragi. Bauh. hiſt.* 2. 967. *f.* 2. *Raii hiſt.* 196.
Atriplex ſylveſtris, ſ. polyſpermon. *Ger.* 257. *f.* 3. *emac.* 325. *f.* 3.
*Leaves quite entire ovate, ſtem decumbent, cymes dichotomous leafleſs axillary.*]

17. Chenopodium Scoparia. *Flax-leaved Gooſefoot, Belvedere*, or *Summer Cypreſs.*
*Lin. ſpec.* 321. *ſyſt.* 262. *Reich.* 622. *hort. cliff.* 86. 10. *upſ.* 55. 2. *Scop. carn. n.* 282.
Linaria ſcoparia. *Bauh. pin.* 212.
L. Belvedere. *Bauh. hiſt.* 3. 462.
Oſyris. *Dod. pempt.* 101.
Scoparia ſ. Belvedere Italorum. *Park. parad.* 268. *t.* 267. *f.* 4. *Raii hiſt.* 210.
S. ſ. Oſyris Græcorum. *Ger.* 443. *f.* 9. *emac.* 554. *f.* 11.
*Leaves linear-lanceolate flat quite entire.*

[18. Chenopodium maritimum. *Sea Gooſefoot*, or *White Glaſſwort.*
*Lin. ſpec.* 321. *Reich.* 622. *fl. ſuec. n.* 224. *hort. cliff.* 86. 12. *Hudſ. angl.* 107. *With.* 256. *Lightf.* 150. *Scop. carn. n.* 283. *Fl. dan. t.* 489.
Kali minus. *Ger. emac.* 535. *f.* 3. *Raii hiſt.* 198. *n.* 14.—album. *Park.* 279.—ſemine ſplendente. *Bauh. pin.* 289. *Mor.* 2. 610. *ſ.* 5. *t.* 33. *f.* 3[2]
*Leaves ſubulate ſemicylindric.*

19. Chenopodium ariſtatum. *Awned Gooſefoot.*
*Lin. ſpec.* 321. *ſyſt.* 262. *Reich.* 622. *mant.* 347. *Gmel. ſib.* 3. 83. *t.* 15. *f.* 1.
β. Ch. virginicum. *Lin. ſpec. edit.* 1. 222.
*Leaves lanceolate ſomewhat fleſhy quite entire; corymbs dichotomous awned axillary.*

20. Chenopodium oppoſitifolium. *Oppoſite-leaved Gooſefoot.*
*Lin. ſyſt.* 262. *ſuppl.* 173.
Salſola oppoſitiflora. *Pall. it.* 2. 735. *t.* O.
*Leaves oppoſite lanceolate-ſubulate very ſhort.*

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21. Chenopodium punctulatum. *Dotted-leaved Gooſefoot.*
*Scop. inſubr.* 26. *t.* 11.
*Leaves dotted with white, the bottom ones rhomb-ovate ſinuate, the uppermoſt elliptic; racemes lateral ſpiked leafy.*

22. Chenopodium triandrum. *Three-ſtamened Gooſefoot.*
*Forſt. ſtorul. auſtr. n.* 129.
*Leaves cordate-ſagittate, ſpikes terminal leafleſs interrupted.*

23. Chenopodium laterale. *Branching oblong-leaved Gooſefoot.*
*Ait. hort. kew.* 1. 313.
*Stem-leaves lanceolate obtuſe, thoſe of the branches oblong; peduncles lateral ſolitary one-flowered.*

DESCRIPTIONS, &c.

1. *Root* perennial, branched. *Stem* twelve to eighteen inches in height, at bottom round and ſmooth, upwards finely grooved, and ſomewhat angular, covered with tranſparent powdery globules, and branched. *Leaves* petioled, alternate, ſmooth; underneath veiny, paler and mealy, ſomewhat waved. *Spike* terminal, yellowiſh, conical, mealy: at bottom branched, at top cluſtered and cylindrical. Spikelets alternate, ſeſſile; flowers cluſtered, ſeſſile[a]. Lower ſpikelets on ſhort peduncles from the boſom of the flower-leaves[b]. *Calyx* one-leafed, deeply divided into five ſegments, which are jagged at top.

[a] Linn. [b] Withering.

*Style* none: ſtigma divided to the baſe into two, three or four whitiſh, ſpreading ſegments, running to a point. *Seed* large, ſomewhat kidney-ſhaped, exceeding the calyx, and covered with a fine ſkin. Female flowers are numerous among the hermaphrodite ones.

It is gathered while young and tender to eat as Spinach. At Boſton in Lincolnſhire it is generally cultivated, and is there preferred to Spinach[c]. The young ſhoots peeled and boiled, may be eaten as Aſparagus, and are gently laxative. The leaves are often boiled in broth. The roots are given to ſheep that have a cough[d]. As a medicine this herb is ranked among the emollients, but rarely made uſe of in practice. The leaves are applied by the common people for healing ſlight wounds, and cleanſing old ulcers. It grows in waſte places, by road ſides, about farm yards, *&c.* flowering and ſeeding from may to auguſt[e].]

Mr. Miller thinks that it is not originally a native of England, but that having been formerly cultivated in kitchen gardens, the ſeeds have got out from them. [Our oldeſt herbariſts however mention it as a plant found commonly wild.

2. Diſtinguiſhed by its very long racemes, altogether erect, and approximating to the ſtem[f]; which is erect and ſimple. Leaves alternate, petioled, acute at each end, ſmooth, with one or two teeth in the hinder part. Racemes axillary and terminal[g]. Poſſibly it may be a variety of *C. rubrum*. There ſeems to be no diſtinction but in the racemes; except that the calyx is ſmaller[h].

Villars ſays, that it bears ſome reſemblance to *C. album*, but that the leaves are broader and more obtuſe, and that the branches approximate more to the ſtem.

This and all our ſucceeding wild ſpecies are annual; grow abundantly on dunghills and in waſte places; and flower from july to ſeptember.

3. This has the appearance, erect ſtature, height, colour and leaves of red garden Orach. *Stem* ſimple, ſcarcely pubeſcent with meal, not gloſſy, ſtriated towards the top. *Leaves* alternate, petioled, ſomewhat toothed. *Raceme* terminal, more and more crowded towards the top: racemules ſimple, with ſmall linear leaves interpoſed. *Flowers* three to five in a racemule, ſeſſile, blood red, all hermaphrodite: calyx five-cornered, five-cleft. Annual. Found in Siberia, by Pallas[i].—Native of China. Introduced 1780, by Monſ. Thouin[k].

4. Stems decumbent, and cloſe to the ground. Leaves ſhining, thick. Spikes compoſed of ſeſſile glomerules, ſeparated by ſmall linear leaves. When ripe it grows red, and is diſperſed[l]. Dr. Withering has deſcribed the ſtem as pale green, ſmooth, ſlightly ſcored with lines of a deeper green: branches axillary, upright. Petioles as long or longer than the branches that riſe from them. No ſhining ſpangles on the leaves or calyx ſo as to give the plant a white appearance, but when held againſt a ſtrong light an infinite number of ſhining particles appear. Racemes in the boſom of the upper leaves. According to Lyons, the leaves are alternate, upright, running down into the petioles, ſharp, finely toothed, ſmooth above. Petioles the length of the leaves. The whole panicle is longer than the ſtem[m]. Dr. Stokes has corrected the ſpecific character thus—leaves deltoid, tooth-ſinuate, teeth acuminate; racemes erect, compound, leafy, ſhorter than the leaf. Mr. Hudſon doubts whether this be diſtinct from *C. urbicum*.

5. Halſer thinks, that the *rubrum* and this are not diſtinct ſpecies. They have certainly been confounded. Monſ. Villars ſays, that the leaves of the *rubrum* are blunter, and red on the edges, and that the ſtem is higher. It is moſt ſtrikingly diſtinguiſhed by the particular form of its racemes, which are ſhort and ſpread out widely, ſo as to give them a depreſſed appearance, the tops ſomewhat curled in: the racemes of the *rubrum* and *urbicum*, which are moſt liable to be miſtaken for it, are perfectly upright: its gloſſy leaves and unpleaſant ſmell contribute alſo to point it out. The whole plant is ſometimes tinged with red[n].

Mr. Curtis obſerves that this, and moſt other ſpecies of the genus, afford plenty of ſeeds, for the ſupport of ſmall hard-billed birds.

6. The ſtem, ſays Linneus, is the height of a man, very much branched. Leaves pale green, reſembling thoſe of *C. album*, but broader. According to Haller, the ſtem is branching, diffuſed. Leaves green, not mealy, petioled, three-lobed; middle lobe triangular, long, lanceolate, entire, with few teeth, or wholly toothed; middle lobes deeply ſeparated from it by a rectangular inciſion. Spikes of flowers compoſed of ſmall balls, branched and divaricated when ripe. Haller ſuſpects that it may be a variety of his n. 1581. *C. hybridum*. Dr. Withering takes *C. viride* of Curtis to be this ſpecies.

7. *Stem* upright, from one to three feet high, ſlightly crooked, ſomewhat angular and ſtriated, ſolid, branched, ſmooth, ſometimes purpliſh: branches alternate. *Leaves* deeply and irregularly indented, blueiſh green, covered eſpecially underneath with a mealy powder; the uppermoſt oblong, leſs deeply indented and even entire. *Racemes* axillary, upright, forming a ſpike of flowers growing in little cluſters. It is whiter than moſt of the *Chenopodiums*; and varies exceedingly, both when young, and in its ſeeding ſtate. This is the moſt common of the genus, occurring in every garden, on every dunghill, and in moſt corn fields[o].

It is mentioned by Lightfoot and ſeveral other authors as being boiled and eaten for greens, and is known by the name of *Fat-hen* or *Muckweed*.—Linneus affirms that ſwine are extremely fond of it, and yet *C. murale* and *hybridum* are ſaid to be fatal to this animal, contrary to all probability, ſince the common Gooſefoots ſeem to be mild and gently laxative like Spinach.

8. Stem upright, green, with purpliſh angles. Branch-leaves lanceolate, entire, or with only one or two teeth. Racemes filiform, divided, long, naked. Calyxes of the fruit with five ſharp angles. So nearly allied to the foregoing, as to make it doubtful whether it be any thing more than a variety[p]. Accordingly Mr. Hudſon gives it merely as ſuch; and Monſ. Villars conſiders it in the ſame light. Mr. Curtis however points out the following diſtinctions. The appearance of the whole plant is greener; the bright red colour at the angles of the joints is conſtant; the leaf is much longer; though not deſtitute of meal, yet this has it not in ſuch profuſion as the *album*; when the ſeeds are ripe, the tops of the ſtalks are more apt to hang down; the parts of fructification are ſmaller; the calyx is not quite ſo much covered with little globules; the ſeed is ſmaller, and reticulated with impreſſed dots, whereas in the *album* it is ſmooth.

9. *Stem* from one to two feet high, upright, branched, angular, and perfectly ſmooth. *Leaves* petioled, alternate, ſmooth, without any meal, veiny, ſpreading, with three teeth on each ſide large and diſtant; in form reſembling thoſe of the Thorn-apple. This ſpecies varies the leaſt of any; the panicle of flowers is peculiarly branched and naked; it has a ſtrong and diſagreeable ſmell. It is not common near London, being obſerved only in Batterſea-fields and about Northfleet. It has been found alſo near Ely and Colcheſter. Mr. Lightfoot enumerates it among the Scottiſh plants[q].

If any of the *Chenopodiums* be poiſonous, this muſt be the ſpecies. Linneus ſuſpects it to have ariſen from the *viride*.]

10. This ſends up ſeveral ſtems from the root, which riſe about two feet high. Leaves light green, alternate. Flowers axillary from the upper part of the branches, in looſe racemes. They appear in july, and the ſeeds ripen in ſeptember. The leaves emit

[c] Curtis. [d] Linn. ſuec. [e] Curtis. [f] Linn. ſuec. [g] Lyons. [h] Woodw. in Witherng. [i] Linn. ſuppl. [k] Hort. kew. [l] Linn. [m] Relh. cant. [n] Curtis. [o] Ibid. [p] Linn. [q] Curtis.

a very ſtrong odour when bruiſed, ſomewhat like that of Ambroſia; and for this principally the plant is preſerved in gardens, for the flowers have no beauty.

[Native of the South of Europe. Cultivated in 1551[1].

11. Stem from twelve to eighteen inches high, ſometimes reddiſh, round, ſtriated, with fine ſcattered hairs. Leaves pale green, oblong, ſinuated; at the baſe of each, peduncles an inch long, on which are ſeveral little heads of flowers alternately diſpoſed, with a leaflet under each. It grew firſt in Prater's garden, in the year 1619[2].

Native of Mexico. Cultivated in 1640[3].

The leaves and flowery heads of both theſe plants have a ſtrong and not unpleaſant ſmell, and a moderately aromatic taſte ſomewhat bitteriſh: on much handling them, an unctuous reſinous juice adheres to the fingers. The proper menſtruum of their active matter is rectified ſpirit; but they give it out alſo to boiling water. The infuſions, which are not unpalatable, are ſaid to be of ſervice in humoural aſthmas and coughs, and other diſorders of the breaſt: they are ſuppoſed alſo to be antiſpaſmodic and antihyſteric. The ſeed is reckoned among the anthelmintics, and the herb dried is put among cloaths to keep away moths[4].]

β. This has leaves very like thoſe of the Botrys, with the ſame ſcent: but it has a ſhrubby ſtalk, which riſes five or ſix feet high, and divides into many branches. It is a native of the Braſils.

12. This riſes with a ſhrubby ſtalk three or four feet high; with oblong leaves cut into many linear ſegments. It grows naturally at Buenos Ayres.

[It differs from the *Chenopodiums* in having the calyx ſomewhat longer, leſs deeply cut, and not embracing the ſeed ſo cloſely; the ſtyle alſo is five-cleft[5].

13. Stems three cubits high, ſtraight, ſtiff, grooved, hairy, dividing into few branches to the middle, but above that more branched. Leaves green on both ſides, the middle nerve only hairy, in form reſembling thoſe of *Lycopus*, not without ſmell but leſs ſweet than the laſt. Racemes axillary, upright, green. Calyxes very ſmall, incloſing the ſmall, ſhining, brown, roundiſh ſeed, a little compreſſed[6].

At Buenos Ayres, and in Penſylvania and New Jerſey, where it is called *Wormſeed* and *Jeruſalem Oak*. The ſeeds are given to children againſt the worms. It has a diſagreeable ſcent[7].

Cultivated by Dr. Sherard at Eltham, 1732[8].

14. Stem decumbent, marked with lines, branching, ſmooth, mealy, as is the whole plant. Leaves ſeſſile, alternate, the uppermoſt wedge-form or lanceolate, ſucculent, blue-green with the edges reddiſh[9]. Stem from twelve to eighteen inches high, angular, green. Leaves petioled, angular, obruſe. Panicles axillary, dichotomous, compoſed of green florets ſeſſile in bunches[10].

According to Villars, it has much affinity to *C. album*; but the leaves are blunt and quite white: the ſtems are lower, and very much branched.

15. The whole plant is ſprinkled with a white pellucid meal. Stems numerous, ſpreading, round, ſomewhat ſtriated, and thinly beſet with leaves, which are alternate, petioled. Flowers axillary and terminal, cloſely cluſtered and ſubſpiked. This ſpecies is eaſily known by its decumbency, and its permanently diſagreeable odour of ſtale ſalt fiſh, both green and dried. Common on dry banks, and at the foot of walls and paling[11].

On account of its ſtrong ſcent it is reckoned an uſeful antihyſteric: ſome recommend a conſerve of the leaves, others an infuſion in water, others a ſpirituous tincture of them. On ſome occaſions, it may perhaps be preferable to the fetids which have been more commonly made uſe of, as not being accompanied with any pungency or irritation, and ſeeming to act merely by virtue of its odorous principle[12]. It is omitted in the laſt edition of the London Pharmacopoeia, and, as Allioni affirms, is not undeſervedly neglected.

This herb dyes a good ſtrong greeniſh lemon colour.

16. This ſpecies is ſufficiently obvious from its ſquare ſtalk generally of a bright red colour, its long extended branches, and its reddiſh ſeeds which are numerous and ſtrikingly viſible from being only in part covered with the calyx[13]. It has the appearance of a ſmall Amaranth. Linnæus ſays the ſtem is decumbent. Curtis makes it in general nearly upright. According to Lightfoot and Reichard it is ſometimes one, ſometimes the other.—Leaves in more luxuriant plants with a large tooth on one, and ſometimes on both ſides. The ſmall lanceolate leaves of the upper flowering branches, at firſt ſight induce one to ſuppoſe the racemes to be leafy; theſe when firſt in bloſſom are ovate or globular[14].

Mr. Curtis remarks that it is a troubleſome weed to the gardener, but ſcarcely injurious to the farmer. Mr. Woodward however ſays that it is generally found in turnep fields; and Ray affirms that it grows abundantly in hop grounds, and corn fields where the ſoil is good.—It is a very grateful food to fiſh in ponds[15].

17. Stem round. Leaves ciliated about the edge, nerved beneath. Flowers two ſeſſile in the uppermoſt axils. Style biſid and trifid. Pericarp five-cornered[16].]

It is a beautiful plant, naturally diſpoſed to grow very cloſe and thick, and in as regular a pyramid as if cut by art. The leaves are a pleaſant green, and were it not for that, it has ſo much the appearance of a Cypreſs tree, that at ſome diſtance it might be taken for it.

[Scopoli affirms that this plant drives away bugs. It grows wild in Carniola, Greece, China, and Japan. Cultivated 1633[17].

18. Stem furrowed. Branches alternate. Flowers ſolitary, axillary: calyx one-leafed, divided: ſtyle ſingle: ſtigmas three, pink-coloured. Seeds gloſſy. On ſea ſhores, and in ſalt marſhes. An excellent pot-herb[18].—It varies much in ſize and appearance; being either very ſmall and decumbent, or elſe growing up into an erect woody ſhrub[19].

19. Panicle large, extremely divaricated and dichotomous, a flower being interpoſed: when the dichotomy ceaſes the flowers are alternate and ſeſſile; under theſe is an awn.—Native of Siberia and Virginia[20]. Introduced 1771, by Mr. Reichard[21].

20. Stem round, ſomewhat woody and even. Branches oppoſite, wand-like, almoſt ſimple, purpliſh. Leaves half-ſtem-claſping, ſcarcely connate, acute, ſcarioſe about the edge. Rudiments of branchlets in the axils of the leaves, ſhort. The appearance of this is different from that of the other ſpecies: perhaps it may be a *Polycnemum*[22].—Native of Siberia.

21. *Root* annual. *Stem* erect, two feet high, round, ſtriated, rigid, yelloviſh at the baſe, red in other parts, with white dots ſcattered all over it. *Leaves* alternate, remote, petioled; petioles ſhort, red: the lower leaves a little ſinuated, and dotted with white; the upper not ſinuated. *Flowers* racemed, crowded into ſpikes, ſeldom an inch long, uſually ſhorter than the ſubjacent leaf: upper racemules leafleſs, lower leafy. *Calyx* red, powdered with white meal, compoſed of five ſubovate leaflets, at firſt converging, afterwards ſeparating. The white dots magnified, appear to be round or oval granules, more or leſs flatted, dark in the middle, but lucid towards the edge: there are many of theſe on the upper leaves, but few on the lower. It is not a native of Europe. The ſeeds were ſent by Marſigli, and the plant flowered in the garden at Pavia on the 28th of june 1786.

[1] Hort. kew. from Turner.
[2] Bauh. pin.
[3] Hort. kew. from Park.
[4] Knocker.
[5] Dillenius.
[6] Ibid.
[7] Kalm.
[8] Dillenius.
[9] Knocker.
[10] Pollich.
[11] Curtis.
[12] Lewis.
[13] Curtis.
[14] Stokes in Withering.
[15] Loefel. in Linn. ſuec.
[16] Scopoli.
[17] Gerarde.
[18] Withering.
[19] Ray.
[20] Linn.
[21] Hort. kew.
[22] Linn. ſuppl.

Perhaps it may be the ſame with *C. Atriplicis*, though it does not agree in the leaves, *&c.*[1].

22. Found in New Zealand[1].

23. Introduced 1781, by P. M. A. Brouſſonet, M. D.[2]

PROPAGATION AND CULTURE.

Moſt of theſe plants are to be eradicated as weeds rather than cultivated. Being very ſucculent and exhauſting, and abounding very much in ſeed, they ſhould be carefully deſtroyed, eſpecially on dung-hills.

1. Sow the ſeed of Engliſh Mercury in march, on a deep loamy ſoil, prepared as for Aſparagus, let the ſeedlings continue to grow till autumn; about the middle of ſeptember, taking advantage of a wet ſeaſon, ſet the plants out on a bed ſimilar to that on which they were ſown, about a foot apart; keep them clear of weeds, and the enſuing ſpring and ſummer they will afford an abundant crop: the young ſhoots with their leaves and tops are to be cut as they ſpring up; and being a perennial plant it will continue thus plentifully to produce for a great number of years. In the winter the bed is to be covered with dung, which ſhould be raked off as the ſpring advances, when the earth around the roots is carefully to be dug or forked up[1].]

The ſeeds of all the ſpecies ſucceed beſt, if they are ſown in autumn; for when they are ſown in the ſpring, they frequently lie a whole year before the plants come up: for which reaſon where the ſeeds ſcatter, the plants will come up much better than thoſe which are ſown by hand.

10, 11. A few of theſe plants, which will come up of themſelves, may be tranſplanted in the ſpring into pots, filled with kitchen garden earth, to be preſerved through the winter, and the others may be planted in the common borders, where they will flower and perfect their ſeeds; but unleſs the winter is very favourable, the roots will be deſtroyed.

11. β. Muſt be houſed in the winter. It is eaſily increaſed by cuttings during any of the ſummer months, planted in a ſhady border and duly watered; then ſet in pots filled with light earth, and placed in the ſhade till they have taken root, after which they may be placed with other hardy exotic plants in a ſheltered ſituation during ſummer; and when froſt comes on, they muſt be removed into the greenhouſe, having plenty of air in mild weather.

12. This is perennial; and retaining its leaves through the year, will add to the variety in a greenhouſe during winter: but it has little other beauty to recommend it. This may be propagated by cuttings, and muſt be treated in the ſame manner with the foregoing.

17. The ſeeds ſhould be ſown in autumn, and in the ſpring, when the plants are come up, they may be put into pots of good earth, and kept ſupplied with water in dry weather: theſe pots may be intermixed with other plants to adorn court-yards, *&c.* where they will appear very handſome, until their ſeeds begin to ſwell and grow heavy, ſo as to weigh down and diſplace the branches, when the pots ſhould be removed for the plants to perfect their ſeeds, which will come of themſelves in the ſpring, if they be permitted to ſcatter.

[CHENOPODIUM. See *Amaranthus, Illecebrum, Polycnemum, Salſola.*

CHERAMELA. See *Averrhoa.*

CHERLERIA. (*From Jo. Hen. Cherler, ſon-in-law to John Bauhin, whom he aſſiſted in his hiſtory.*)

*Lin. gen. n.* 570. *Reich.* 619. *Schreb.* 775. *Hall. it. helv.* 1. *Juſſ.* 301.

Claſſ. 10. 3. Decandria Trigynia.

Nat. order of *Caryophylleæ.*

GENERIC CHARACTER.

CAL. *Perianth* five-leaved; *leaflets* lanceolate, concave, equal.

COR. *Petals* none (unleſs you rather call the calyx or nectaries ſo.)

*Nectaries* five, emarginate, placed in a circle; very ſmall.

STAM. *Filaments* ten, ſubulate, of which the alternate ones are affixed to the back of the nectaries. *Anthers* ſimple.

PIST. *Germ* ovate. *Styles* three, ſpreading. *Stigmas* ſimple.

PER. *Capſule* ovate, three-celled, three-valved.

SEEDS two or three, kidney-ſhaped.

ESSENTIAL CHARACTER.

*Cal.* five-leaved. *Nect.* five, bifid, reſembling petals. *Anth.* alternate barren. *Capſ.* one-celled, three-valved, three-ſeeded.

SPECIES.

1. Cherleria Sedoides. *Stone-crop Cherleria.*

*Lin. ſpec.* 608. *Syſt.* 425. *Reich.* 2. 367. *Huds. angl.* 193. *With.* 462. *Lightf.* 232. *Penn. tour. t.* 33. *Hall. helv. n.* 859. *t.* 29. *opuſc.* 300. *t.* 1. *f.* 3. *Segu. veron.* 3. 180. *t.* 4. *f.* 3. *Scop. carn. n.* 531. *Jacqu. auſtr.* 3. *t.* 284. *Villars dauph.* 3. 647.

Lychnis alpina, &c. *Pluk. alm. t.* 42. *f.* 8.

Sedum montanum perpuſillum luteum. *Park.* 737. *f.* 11. *Mor. hiſt.* 3. 471. *f.* 12. *t.* 6. *f.* 14.

DESCRIPTION, *&c.*

1. Leaves oppoſite, linear, rugged about the edge, connate at the baſe into a ſheath. When the leaves are fallen, the ſheaths remain with the keel of the leaves, inveſting the lower part of the ſtem; hence the affinity of this with the caryophylleous plants[2].

It forms large green moſſy tufts. Stems about two inches high, cloſely matted. Flowers from the ſummits of the branches, ſingle, erect, on very ſhort peduncles, yellowiſh green: leaflets of the calyx ſtreaked on the back with three lines. Nectaries much ſhorter than the calyx, fleſhy and connected. The whole plant, at firſt view, has a great reſemblance to a tuft of *Polytrichum* or *Mnium*[3]. Seguier deſcribes the flower as having five petals: Haller and Scopoli deny its having any: Villars ſays, that they are ſo ſmall, as to require the aſſiſtance of a glaſs to view them; but that they are oblong, and cloven at the end: the glands placed between the ſtamens and the calyx are oblong, and four times as large as in *Arenaria.*—Scopoli obſerves that in the garden, the flower ſometimes produces ten entire nectaries, and has all the ſtamens ariſing from the receptacle.

On the mountains of Dauphiné, Switzerland, Savoy, the Valais, Auſtria, Carniola, and the Highlands of Scotland. Perennial. Flowering in july and auguſt.]

CHERRY-TREE, } See *Prunus* and *Cordia.*
CHERRY-LAUREL. }

CHERVIL. See *Chærophyllum* and *Scandix.*

CHESTNUT. See *Fagus.*

CHESTNUT, HORSE. See *Æſculus.*

[CHICK-PEA. See *Cicer.*

CHICKWEED. See *Alſine* and *Arenaria.*

——— Baſtard. See *Buſonia.*

——— Water. See *Callitriche.*

CHIMARRHIS. (*So named by Jacquin* ano τοῦ χειμάρρου, *becauſe it uſually grows by torrents.*)

*Lin. gen. Schreb. n.* 309. *Jacqu. amer.* 61.

Claſſ. 5. 1. Pentandria Monogynia.

GENERIC CHARACTER.

CAL. *Perianth* margin entire, crowning the germ, permanent.

COR. one-petalled, funnel-form: *tube* very ſhort: *border* five-cleft; *ſegments* lanceolate, concave, blunt, hirſute below with a longitudinal line running along the middle, and ſpreading.

STAM. *Filaments* five, ſubulate, hirſute at the baſe, below the diviſions of the border, the length of the corolla. *Anthers* oval, erect.

PIST. *Germ* roundiſh, inferior. *Style* filiform, the length of the ſtamens. *Stigma* bifid, obtuſe.

PER. *Capſule* ſubovate, obtuſe, crowned, two-celled, two-valved: the valves bifid at the tip.

SEEDS ſolitary.

[1] Scop. inſub. [2] Forſter. [3] Hort. kew. [4] Curtis.

[1] Lin. ſyſt. [2] Lightfoot.

ESSENTIAL

ESSENTIAL CHARACTER.

*Cor.* funnel-form, with a very ſhort tube. *Capſ.* inferior, obtuſe, two-celled, two-valved, the valves bifid at the tip. *Seed* one in each cell.

SPECIES.

1. Chimarrhis cymoſa.
*Jacqu. amer.* 61.

DESCRIPTION, *&c.*

It is a lofty tree, with a handſome head, and the boughs ſpreading out horizontally. Leaves ovate, acuminate at both ends, quite entire, ſhining, petioled, oppoſite, a foot long, commonly eight or ten at the end of each twig. Flowers numerous, ſmall, with white corollas, and without ſcent, diſpoſed in cymoſe racemes half a foot in diameter; thoſe in the axils oppoſite and ſolitary, thoſe at the end uſually four together. Capſules ſmall. Wood white and uſed for beams, rafters, *&c.* It is called in Martinico, where it is common, *Bois de riviere*[a].

CHINA. See *Smilax.*

CHINA-PINK. See *Dianthus.*

CHINA-ROSE. See *Hibiſcus.*

CHINCHINA. See *Cinchona.*

CHINQUAPINE. See *Fagus.*

CHIOCOCCA. (From χιὼν, *ſnow*, and κόκκος, *a berry.*)
*Lin. gen. n.* 231. *Reich.* 248. *Schreb.* 315. *Gærtn. t.* 26. *Juſſ.* 204. *Brown.* 164. *Jacqu. amer.* 68.

Claſſ. 5. 1. Pentandria Monogynia.

Natural order of *Aggregatæ. Rubiaceæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-toothed, ſuperior, permanent.

COR. monopetalous, funnel-form. *Tube* long, ſpreading. *Border* five-parted; *diviſions* equal, acute, reflected.

STAM. *Filaments* five, filiform, length of the corolla. *Anthers* oblong, erect.

PIST. *Germ* inferior, roundiſh, compreſſed. *Style* filiform, length of the ſtamens. *Stigma* ſimple, obtuſe.

PER. *Berry* roundiſh, compreſſed, crowned with the calyx, one-celled. (two-celled, *Gærtn. & Browne.*)

SEEDS two, roundiſh, compreſſed, diſtant. (ſolitary, pendulous, *G.*)

ESSENTIAL CHARACTER.

*Cor.* funnel-form, equal. *Berry* one-celled, two-ſeeded, inferior.

SPECIES.

1. Chiococca racemoſa. *Climbing Snowberry-tree*, or *Daniel's-root.*
*Lin. ſpec.* 246. *ſyſt.* 215. *Reich.* 479. *ſuppl.* 145. *Jacqu. amer.* 68. *pict.* 37. *t.* 69. *Brown. jam.* 164. *n.* 1, 2. *Swartz obſ.* 76. *Gærtn. fruct.* 1. 125.
Lonicera racemoſa. *Lin. ſpec. edit.* 1. 175. *hort. cliff.* 496. 8.]
Periclymenum racemoſum. *Mill. dict. n.* 2.——ſ. flaveſcente, fr. nivco. *Plum. ic. t.* 217. *f.* 2. *Dill. elth.* 306. *t.* 228. *f.* 295.
Jaſminum fol. myrtino acuminato, ſ. albicante racemoſo. *Sloan. jam.* 2. 97. *t.* 188. *f.* 3. *Raii dendr.* 64.
Pandacaqui. *Sonner. guin.* 49. *t.* 19.
[β. C. ſcandens ſarmentis tenuiſſimis & fere indiviſis. *Brown. jam.* 164. *n.* 2.
*Scandent, leaves broad-lanceolate, flowers lateral panicle-racemed, one ſtipular tooth.*

2. Chiococca barbata.
*Forſt. fl. auſtral. n.* 96.
*Erect, leaves ovate, peduncles axillary one-flowered, corollas bearded in the throat.*

DESCRIPTION, *&c.*

1. Stem a fathom in height and more, with ſmooth looſe branches ſpreading out horizontally. Leaves petioled, oppoſite, oblong, acuminate, nerved, glittering on the upper ſurface, and ſmooth. Stipules minute, acuminate, within the petioles. Racemes axillary, oppoſite to the branchlets, looſe, ſimple or ſubdivided, ſcarcely longer than the leaves, many-flowered: flowers peduncled, uſually in pairs, directed one way, pale yellow. Calyx ſmall. Tube of the corolla ventricoſe, ſlightly five-cornered: border five-cleft: the ſegments ovate, acute, ſpreading. Filaments ſhort, from the bottom of the corolla, villoſe: anthers linear, the length of the ventricoſe tube. Style thickening towards the top: ſtigmas two, blunt. Berry ſnow-white. Seeds two, oblong, acuminate.

This plant is very nearly allied to the genus *Pſychotria*; but it differs not only in the manner of flowering, which is always in a raceme, but alſo in the form of the corolla, the berry and the ſeeds[c].

According to Browne's account, it begins to branch immediately above the root, and riſes by many ſhoots and ſlender twigs from four to ſeven or eight feet, then requiring ſupport. The racemes are very ſlender and numerous towards the top of the branches, and are both terminating and axillary. The ſnow-white berries are of a looſe texture and very numerous.

The root has much the ſame bitter acrid taſte with the Seneka Snake-root, and has been long uſed as a ſtrong reſolutive and attenuant: it is adminiſtered with great ſucceſs in obſtinate rheumatiſms, and old venereal taints; nor is it entirely uſeleſs even in the *ſpina ventoſa.* It is beſt given in a decoction[d].

Native of the Weſt Indies; as in woods, on the lower mountains of Jamaica.

It flowered in Mr. Sherard's garden at Eltham in 1729, and was ſent thither by Mr. Warner, a merchant of London, who received it from Barbadoes[e]. Jacquin obſerved it in St. Domingo, and alſo at Carthagena.

β. There is a variety of this (Brown. jam. n. 2.) which grows to a conſiderable height, and throws ſome of its ſlender twigs again to the ground. The leaves are very like thoſe of the foregoing[f]; but ſmaller, ſubconvex, ſomewhat rigid, and glittering: the racemes are ſhort and ſimple: the corollas a little larger, pale-coloured but purple at the corners[g].

2. This is a native of the Marqueſas, Society and Friendly Iſlands in the South Seas[h].]

PROPAGATION AND CULTURE.

1. Propagated by ſeeds procured from the Weſt Indies. To be ſown in pots plunged in a moderate hot-bed, where they may remain till the autumn; when they ſhould be removed into the ſtove for the winter, and the following ſpring placed on a freſh hot-bed, to bring up the plants; for they rarely come up the firſt year. When they are fit to remove, plant them each in a ſeparate ſmall pot filled with light earth, and plunge them in a freſh hot-bed, ſhading them from the ſun till they have taken new root, and then treating them as other tender plants from hot countries. As they obtain ſtrength, the plants may be ſet abroad in a ſheltered ſituation for two months or ten weeks, in the warmeſt part of the ſummer, and in the winter they may be placed in a dry ſtove, kept to a moderate degree of warmth, where they will thrive, and produce flowers in autumn.

[CHIOCOCCA nocturna. See *Ceſtrum nocturnum.*
——— paniculata. See *Pſychotria.*]

CHIONANTHUS. (*From* χιὼν, *ſnow, and* ἄνθος, *a flower.*)
*Fringe* or *Snow-drop-tree.* Dutch *Sneebaum.*
*Lin. gen. n.* 21. *Reich.* 21. *Schreb.* 26. *Juſſ.* 105. *Gærtn. t.* 39. *Roxb.*

Claſſ. 2. 1. Diandria Monogynia.

Nat. order of *Sepiariæ. Jaſmineæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, four-parted, erect, acuminate, permanent.

COR. monopetalous, funnel-form. *Tube* very ſhort, length of the calyx, ſpreading. *Border* of four diviſions, which are linear, erect, acute, oblique, moſt extremely long.

STAM. *Filaments* two, very ſhort, ſubulate, inſerted into the tube. *Anthers* cordate, erect.

[a] Jacquin.
[b] Swartz.
[c] Brown. jam.
[d] Dill. elth.
[e] Browne.
[f] Swartz.
[g] Forſter.
[h] Forſter.

PERI. *Germ* ovate. *Style* ſimple, length of the calyx. *Stigma* obtuſe, trifid.

PER. *Drupe* round, one-celled.

SEED. *Nut* ſtriated.

OBS. *The number of ſtamens is often three.*

ESSENTIAL CHARACTER.

*Cor.* quadrifid, with the diviſions extremely long. *Drupe* with a ſtriated nut.

SPECIES.

1. Chionanthus virginica. *Virginia Fringe-tree*, or *Snow-drop-tree.*
*Lin. ſpec.* 11. *ſyſt.* 57. *Reich.* 20. *hort. cliff.* 17. *Duham. arb.* 1. 165. *t.* 63.

Amelanchier virginiana laurocerаſi folio. *Pet. ſicr. in Raii ſuppl. app.* 241. *Cateſb. car.* 1. *t.* 68.
*Peduncles three-cleft three-flowered.*

[2. Chionanthus zeylanica. *Ceylon Snowdrop-tree.*
*Lin. ſpec.* 11. *Reich.* 20. *ſ. zeyl. n.* 14. *Gærtn. fruct.* 1. 189.

Arbor zeylanica, &c. *Burm. zeyl.* 31. *Pluk. alm. t.* 241. *f.* 4. *Raii dendr.* 124.
*Peduncles panicled many-flowered.*

3. Chionanthus compacta.
*Swartz prodr.* 13. *Vahl. ſymb.* 2. 1. C. caribæa. *Jacqu. collect.* 2. 110. *t.* 6. *f.* 1.
*Panicles trichotomous, the laſt flowers ſubcapitate, calyxes villoſe, leaves lanceolate-oblong, anthers acuminate.*

4. Chionanthus Mayepea.
*Vahl. ſymb.* 2. 1.
Mayepea guianenſis. *Aubl. guian.* 81. *t.* 31.
*Panicles axillary trichotomous, all the flowers diſtinct, anthers obtuſe.*]

DESCRIPTIONS, *&c.*

1. This ſhrub is common in South Carolina, where it grows by the ſides of rivulets, and ſeldom is more than ten feet high: the leaves are as large as thoſe of the Laurel, but are of a much thinner ſubſtance; the flowers come out in may, hanging in long bunches, and are of a pure white, from whence the inhabitants call it Snowdrop-tree; and, from the flowers being cut into narrow ſegments, they give it the name of Fringe-tree. After the flowers have fallen away, the fruit appears, which becomes a dark-coloured drupe, about the ſize of a Sloe, having one hard ſeed in it.

[It varies with a four, five and ſix-cleft corolla, and four ſtamens[a]. Alſo, with broader, or ovate-elliptic; and with narrower, or lancolate leaves.—Introduced 1736, by Peter Collinſon, Eſq.[b]

2. Leaves oppoſite, obovate, ſmooth on both ſides, quite entire, ſubpetioled. One panicle from each axil; the peduncle ſubdivided and the flowers ſubſeſſile. The leaves are thicker than in the firſt ſpecies. The panicle has often forty flowers, and the petals are much ſhorter[c]. The fruit is a berried drupe, ſuperior, obovate, ſmooth, black; the ſhell is bony, thin, marked on the outſide with ſix or eight raiſed ſtriform ſtreaks; within it is very ſmooth; and it does not open with valves. The ſeed is an oblong ſpheroid, and bay-coloured[d].

3. This is a tree fifteen feet in height, covered with a duſky aſh-coloured bark. Leaves oppoſite, on ſhort petioles, ſharp at the baſe, narrowed into a long ſharp and ſometimes ſickle-ſhaped termination, quite entire, thickiſh, firm, ſhining, about half a foot in length, and an inch and half in breadth. Common peduncle terminating, trifid, each diviſion having oppoſite branches, which are alſo trifid; the laſt pedicels ſuſtaining ſeveral ſeſſile flowers. Bractes at the diviſions of the peduncles oppoſite, ſmall, narrow, concave, ſharp, ſomewhat villoſe, as are alſo the peduncles, when viewed with a glaſs. Calyx deeply cut; leaflets ovate, acute, ſomewhat villoſe, ciliate about the edge. Petals ſnow-white, ſcarcely any tube, but the ſegments very long, and of a linear ſhape. Style twice as long as the calyx. The firſt ſpecies differs from this in having ſmooth calyxes; and the ſecond differs from both in having the leaves villoſe underneath.

Native of the Caribee iſlands[e].

4. This is a middle-ſized tree, five or ſix feet high, and five inches in diameter, the wood and bark whitiſh. Leaves oppoſite or nearly ſo, ſmooth, thin, firm, long, oval, ending in a point; the largeſt ſeven inches long and two wide, on a ſhort petiole. Calyx very ſmall, divided into four ſharp ſegments. Petals white, concave, terminated by a thread three lines in length. Fruit the ſize of an olive; rind violet, ſucculent, two lines thick, bitter. The flowers exhale a ſweet and pleaſant odour.—Native of the foreſts of Guiana[f].]

PROPAGATION AND CULTURE.

1. The beſt way to obtain good plants, is from the ſeeds, which muſt be procured from America, for they never have produced any fruit in this country. The ſeeds ſhould be ſown in ſmall pots filled with freſh loamy earth ſoon after they arrive, and ſhould be placed under a hot-bed frame, where they may remain till the beginning of may, when they muſt be removed to a ſituation expoſed to the morning ſun, and ſcreened from the ſun in the middle of the day. In dry weather the pots muſt be watered, and kept clean from weeds; for as theſe ſeeds lie in the ground a whole year before the plants will come up, they ſhould not be expoſed to the ſun the firſt ſummer, but the following autumn they ſhould be removed, and placed under a frame, to protect the ſeeds from being injured by the froſt; and if the pots are plunged into a moderate hot-bed the beginning of march, it will bring up the plants much ſooner than they will otherwiſe riſe; by which means they will get more ſtrength the firſt ſummer, and be better able to reſiſt the cold of the next winter. While theſe plants are very young, they will be in danger of ſuffering by ſevere froſt; but when they have obtained ſtrength, they will reſiſt the greateſt cold of our climate in the open air; therefore for the two or three firſt winters, it will be proper to keep them under ſhelter; ſo that the young plants may remain in the ſeed-pots all the firſt ſummer, and the following winter; and in the ſpring before they begin to ſhoot, they ſhould be ſhaken out of the pots, and carefully ſeparated ſo as not to break off their roots, and each planted in a ſmall pot filled with light loamy ſoil, and plunged into a very moderate hot-bed, juſt to forward their taking freſh root; then they ſhould be gradually inured to the open air, and during the following ſummer, the pots ſhould be plunged into the ground, to prevent the earth from drying, in a ſituation where they may enjoy the morning ſun, but ſcreened from the great heat at noon. During the ſummer ſeaſon, they will require to be frequently watered, and kept clean from weeds. The autumn following, they ſhould be again placed under a hot-bed frame to ſcreen them from froſt; but they ſhould enjoy the free air at all times, when the weather is mild. The april following, the plants may be ſhaken out of the pots, with the ball of earth to their roots, and planted where they are deſigned to remain.

This ſhrub delights in a moiſt, ſoft, loamy ſoil, and if it is planted in a ſheltered ſituation, will endure the cold of our winters very well in the open air; but in dry land it is very ſubject to decay in warm ſeaſons.

It may alſo be propagated by layers; but theſe ſeldom take under two years, and not then, unleſs they are well ſupplied with water in dry weather.

CHIRONIA. (*From the centaur Chiron.*)
*Lin. gen. n.* 255. *Reich.* 275. *Schreb.* 349. *Juſſ.* 142. *Gærtn. t.* 114.
Claſſ. 5. 1. Pentandria Monogynia.
Nat. order of *Rotaceæ*. *Gentianæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, five-parted, erect, acute, permanent; *leaflets* oblong.
COR. monopetalous, equal. *Tube* narrower. *Border* five-parted, ſpreading; *diviſions* ovate, equal.

[a] Jacquin collect. [b] Aublet.
[c] Garnet. [d] Hort. kew. [e] Linn. zeyl. [f] Aublet.

STAM. *Filaments* five, broad, short, growing from the tip of the tube. *Anthers* oblong, erect, large, converging, and (after having shed the pollen), spirally twisted.

PIST. *Germ* ovate. *Style* filiform, a little longer than the stamens, declinate. *Stigma* headed, ascending.

PER. ovate, bilocular.

SEEDS numerous, small.

OBS. *In some species the pericarp is a berry, in others a capsule.*

ESSENTIAL CHARACTER.

*Cor.* rotated. *Pist.* declinate. *Stam.* on the tube of the corolla. *Anth.* finally spiral. *Per.* two-celled. The drooping stigma seems to constitute the essence of this genus. *Berg.*

SPECIES.

[1. Chironia trinervia.
*Lin. spec.* 272. *Reich.* 527. *fl. zeyl. n.* 90. *hort. cliff.* 54.
Lysimachia. *Burm. zeyl.* 145. *t.* 67.
*Herbaceous; leaflets of the calyx membranaceous-keeled.*

2. Chironia jasminoides.
*Lin. spec.* 272. *Reich.* 528. *amæn.* 6. *afr.* 5.
*Herbaceous; leaves lanceolate; stem four-cornered.*

3. Chironia lychnoides.
*Lin. syst.* 229. *Reich.* 528. *mant.* 207. *Berg. cap.* 45.
*Stem simple, leaves linear-lanceolate.*

4. Chironia campanulata.
*Lin. spec.* 272. *Reich.* 528.
*Herbaceous; leaves sublinear, calyxes the length of the corolla.*

5. Chironia angularis.
*Lin. spec.* 272. *Reich.* 528.
*Herbaceous; stem acute-angled, leaves ovate stem-clasping.*

6. Chironia linoides. *Flax-leaved Chironia.*
*Lin. spec.* 272. *syst.* 229. *Reich.* 529. *hort. cliff.* 54. *Berg. cap.* 43.
Rapuntio affinis. *Breyn. cent.* 175. *t.* 90.
*Herbaceous; leaves linear.*

7. Chironia nudicaulis.
*Lin. syst.* 229. *suppl.* 151.
*Herbaceous; leaves oblong bluntish, stems subdiphyllous quite simple one-flowered, calyxes with setaceous teeth.*

8. Chironia tetragona.
*Lin. syst.* 229. *suppl.* 151.
*Shrubby; leaves ovate three-nerved bluntish, leaflets of the calyx bluntish keeled.*]

9. Chironia baccifera. *Berry-bearing Chironia.*
*Lin. spec.* 273. *syst.* 229. *Reich.* 529. *Curtis magaz. t.* 233. *Gærtn. fruct.* 2. 156.
Centaurium. *Comm. rar. t.* 9. *Oldenl. afr.* 26.
*Shrubby, berry-bearing.*

10. Chironia frutescens.
*Lin. spec.* 273. *syst.* 229. *Reich.* 529. *amæn.* 4. 308. *n.* 130. *Berg. cap.* 45. *Mill. fig. t.* 97. *Curt. mag. t.* 37.
Centaurium. *Comm. rar. t.* 8. *Oldenl. afr.* 26. *Burm. afr.* 205. *t.* 74. *f.* 1.
*Shrubby; leaves lanceolate subtomentose; calyxes bell-shaped.*

DESCRIPTIONS, &c.

[1. *Stem* annual, quadrangular, acute. *Leaves* opposite, lanceolate, acuminate at each end, smooth, quite entire, three-nerved. *Flowers* from the upper axils opposite, solitary, peduncled[a]. Burman adds, that the *stem* is glossy, ash-coloured, furrowed, with four joints or more. At each joint a pair of sessile leaves. *Flowers* elegant, blue. *Capsule* one-celled.—Native of Ceylon and the Cape.

2. *Stem* glossy. *Leaves* opposite, sessile, smooth, quite entire, shorter than the internodes, erect. *Panicle* terminal, dichotomous, erect, few-flowered. *Branches* opposite, subulate. *Calyx* with lanceolate acuminate leaflets, rather spreading, the length of the tube of the corolla[b].

Native of the Cape.

[a] Linn. zeyl. [b] Linn. amœn.

3. *Stem* entirely simple, round, stiff and straight, two feet high. *Leaves* opposite, sessile so that the bases touch, glossy, longer than the internodes, erect, subdecurrent. *Peduncles* three terminal, longer than the leaves, the lateral ones having a pair of subulate bractes. Leaflets of the *calyx* lanceolate-subulate, keeled. *Corolla* purple, the size of *Gladiolus*; tube length of the calyx, divisions sharp, longer than the tube[c].—Native of the Cape.

4. *Stem* a foot high, round with long branches. *Leaves* lanceolate-linear glossy. *Flowers* terminal, solitary, wheel-shaped, purple, on a long peduncle. Leaflets of the *calyx* subulate[d].—Observed in Canada, by Kalm.

5. This has the appearance of lesser Centory, (*Gentiana Centaurium*). *Stem* a foot high, four-cornered, with membranaceous wings. *Flowers* heaped, as in *Hypericum*. *Style* bifid[e]. Found in Virginia, by Kalm.

6. An undershrub, with filiform, round, smooth branches. Leaves opposite, acute, a little compressed, an inch or more in length, succulent, smooth, sessile, frequent, longer than the internodes. Flowers scarlet, solitary at the ends of the branches, peduncled. Tube of the corolla only half the length of the calyx[a], which is half-five-cleft and obtuse[f].

Native of the Cape. Introduced in 1787, by Masson[a].

7. This is singular for its oblong leaves frequently rooted into a tuft. *Stems* many, elongated, with two leaves in the middle, or two pairs of leaves. Divisions of the calyx subulate.—Discovered at the Cape, by Thunberg[g].

8. Corolla yellow, large. It differs from the first species in being shrubby; in having shorter and more obtuse leaves.—Native of the Cape[h].

9. This plant grows to the height of a foot and half or two feet, and becomes very bushy, rather too much so in point of ornament. It produces both flowers and fruit during most of the summer[i].

The stem is quadrangular. The calyxes subulate and short[k].

The pericarp, according to Gærtner, is a berry, which is succulent, subdiaphanous, globular, twin, red or saffron-coloured, one-celled; with a very thin transparent skin, and a watery pulp, but two spongy receptacles, which are fixed to the sides of the berry longitudinally, where the groove is externally, and two-lobed within, the lobes curved back to the sides. The seeds are numerous, small, ovate-globular, netted, dark chestnut colour.

It is a native of Africa, and was cultivated in 1759, by Mr. Miller[l].

10. Branches round, tomentose, ash-coloured, mostly alternate, subdividing a little at top. Leaves opposite, obtuse, fleshy, about two inches in length, sessile, frequent, twice as long as the internodes. Peduncles two or three together, terminating, each having two or three flowers, arising from the axils, with a pair of linear folioles in the middle; the pedicels one-flowered[m].

The leaflets of the calyx are ovate, obtuse, subtomentose, much broader than the tube of the corolla[n]. The pericarp is berried in this sort also, but it is much smaller than in the foregoing, concealed within the calyx, ovate, acuminate, red, and opening at length into two valves at the groove[o].—Native of Africa. Cultivated in 1756, by Mr. Miller[n].]

PROPAGATION AND CULTURE.

9, 10. The seeds should be sown in small pots filled with light sandy earth, soon after they are ripe, and plunged into a moderate hot-bed, and must be frequently but gently watered; sometimes the seeds will lie a long time in the ground, so that if the plants do not appear the same season, the pots should not be disturbed, but preserved in shelter till the following spring, and then plunged into a fresh hot-

[a] Linn. mant. [b] Linn. spec. [c] Ibid. [d] Bergius. [e] Linn. syst. [f] Hort. kew. [g] Linn. suppl. [h] Ibid. [i] Curtis. [k] Linn. syst. [l] Hort. kew. [m] Berg. [n] Linn. syst. [o] Gærtner. [p] Hort. kew.

bed, which will bring up the plants in a ſhort time, if the ſeeds are good. When the plants are fit to remove, they ſhould be tranſplanted into ſmall pots, four or five in each pot; then plunge the pots into a moderate hot-bed, and ſprinkle them with water, and ſhade them every day from the ſun till they have taken new root; after which they muſt have a large ſhare of air in warm weather, to prevent their drawing up weak: when the plants have obtained ſome ſtrength, they muſt be gradually inured to bear the open air; but when they are expoſed abroad, if there ſhould happen much rain, the plants muſt be ſcreened from it, otherwiſe it will cauſe them to rot: when the plants have filled the pots with their roots, they ſhould be parted, and each put into a ſeparate pot filled with light ſandy earth, not rich with dung, placing them in the ſhade till they have taken freſh root; then they may be removed to a warm ſheltered ſituation, and mixed with ſuch other plants as require but little water; in which ſituation they may remain till autumn, when they muſt be placed in a dry airy glaſs-caſe; and in the winter ſhould have very little wet, but muſt enjoy the ſun as much as poſſible; and in mild weather ſhould have freſh air admitted to them, but muſt be protected from froſt: with this management, the plants will thrive and produce flowers the ſecond year from ſeed.

[The cuttings alſo will take root with proper management, but not very readily.

Moſt of the other ſpecies, coming from the Cape, may be increaſed and treated in the ſame manner.

CHIRONIA. See *Cicra*, *Gentiana*.

CHIRONIUM. See *Laſerpitium*.

CHLAMYDIA. See *Phormium*.]

[CHLORA. (*From* χλωρὸς, *green or pale: becauſe the flowers are of a pale yellow colour.*)

*Lin. gen. Reich. n.* 519. *Schreb.* 653. *Juſſ.* 142. *Adanſ. fam. plant.* 503. *Blackſtonia. Hudſ. angl. edit.* 1. 146.

Claſſ. 8. 1. Octandria Monogynia.

Nat. order of *Rotaceæ*. *Gentianæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* eight-leaved; *leaflets* linear, ſpreading, permanent.

COR. monopetalous, ſalver-ſhaped. *Tube* ſhorter than the calyx, coating the germ. *Border* eight-parted; *diviſions* lanceolate, longer than the tube.

STAM. *Filaments* eight, very ſhort, ſeated on the throat. *Anthers* linear, erect, ſhorter than the diviſions.

PIST. *Germ* ovate-oblong. *Style* filiform, length of the tube. *Stigmas* four, oblong, cylindric. (Style none: ſtigmas two. *Hudſ.* Style ſimple; ſtigma four-cleft. *Smith.*)

PER. *Capſule* ovate-oblong, one-celled, ſomewhat compreſſed, furrowed, two-valved; valves incurvated on the ſide.

SEEDS numerous minute.

OBS. *This genus is allied to* Gentiana: *but differs in the number of ſtamens, and ſegments of the calyx and corolla.*

Chl. dodecandra *differs in having the flowers twelve-cleft, and furniſhed with twelve ſtamens.* R.

ESSENTIAL CHARACTER.

*Cal.* eight-leaved. *Cor.* one-petalled, eight-cleft. *Capſ.* one-celled, two-valved, many-ſeeded. *Stigma* four-cleft.

SPECIES.

1. Chlora perfoliata. *Perfoliate Yellow-wort*, or *Yellow Centaury.*

*Lin. ſyſt.* 361. *Reich.* 2. 161. *Hudſ. angl.* 168. *With.* 392. *Lightf.* 200. *Relh. n.* 301. *Sowerby engl. bot. t.* 60. *Villars dauph.* 3. 412.

Chlora. *Renealm. ſpec.* 80. *t.* 76.]

Gentiana perfoliata. *Lin. ſpec.* 335. *hort. cliff.* 81. 10. & 496. 11. *Mill. dict. n.* 10. [*Hall. helv. n.* 649. *Scop. carn. n.* 299. *Pollich pal. n.* 262. *Sabbat. hort. t.* 100.

Centaurium luteum perfoliatum. *Boub. pin.* 278. *Camer. epit.* 427. *Mor. hiſt.* 2. 565. *ſ.* 5. *t.* 26. *f.* 1, 2. *Raii ſyn.* 287. *hiſt.* 1093. *Bauh. hiſt.* 3. 355. *fig.*

C. parvum flavo flore. *Cluſ. hiſt.* 2. 180.

C. minus lut. perfol. ramoſum. *Park.* 271. 5. *fig.* 272. 5.

β. C. pulillum luteum. *Bauh. pin.* 278. *Mor. ſ.* 3. *Park.* 273. 7. *fig.* 272. 7.

C. luteum novum. *Col. ecphr.* 2. 78.

*Leaves perfoliate.*

2. Chlora imperfoliata.

*Lin. ſyſt.* 362. *ſuppl.* 218.

*Corollas five-cleft.*

3. Chlora quadrifolia.

*Lin. ſyſt.* 362. *Reich.* 2. 161.

Gentiana quadrifolia. *Lin. ſpec.* 1671.

*Leaves in four's.*

4. Chlora dodecandra.

*Lin. ſyſt.* 362. *Reich.* 2. 162.

Chironia dodecandra. *Lin. ſpec.* 373.

Gentiana flor. duodecim-petalis, fol. diſtinctis. *Gron. virg.* 29.

*Leaves oppoſite.*

DESCRIPTIONS, *&c.*

1. The whole plant generally very glaucous. *Stem* cylindric, ſmooth, from three inches to three feet high. *Root-leaves* oval, ſeſſile, ſpreading in form of a ſtar; *loweſt ſtem-leaves* oval-lanceolate; the reſt perfoliate, as if compoſed of two lanceolate or cordate leaves running into each other at the baſe; all of a glaucous colour. *Flowers* in a kind of umbel, of three rays, encompaſſed by the uppermoſt leaf; the middle one bearing one flower without any leaves: the outer ones terminated by a leaf ſimilar to the ſtem-leaves, from which ariſes an umbellate ſupporting one or more flowers. *Calyx* ſometimes equal to, ſometimes longer, and ſometimes ſhorter than the corolla; leaflets eight to ten. *Corolla* gold-coloured, with a milky juice; ſegments ſometimes nine, ſlightly emarginate. *Stamens* ſix to nine or ten. *Style* cloven, yellow, thickeſt towards the top: *ſtigmas* two, ſhaped like a horſe-ſhoe, yellow *. Capſule more rounded than in the Gentians.—Annual. Paſtures, in chalky and limeſtone ſoils; flowering from june through the autumn.

It was firſt ſeparated from the Gentians by Mr. Hudſon. He gave it the name of *Blackſtonia*, from Mr. Blackſtone an apothecary, author of *Faſciculus plantarum circa Harefield*, and *Specimen botanicum*: but Linnæus has adopted Reneaume's name of *Chlora*, after Adanſon; and Mr. Hudſon has given up the title of *Blackſtonia*, in the ſecond edition of his Flora.

Haller affirms that it is more bitter than the red (*Gentiana Centaurium*), and that it ſeems to poſſeſs the ſame qualities.

2. *Stem* herbaceous, quite ſimple, erect, four-cornered, gloſſy, a hand in height; the internodes longer than the leaves. Leaves oppoſite, ſeſſile, inclined to ſtem-claſping, ovate, gloſſy, acute. *Flower* peduncled, terminal, full yellow, larger than the leaf. *Calyx* one-leafed, bell-ſhaped, the length of the corolla, bifid beyond the middle, ſpreading, permanent; diviſions lanceolate. *Corolla*, tube ſhort, ſpreading; diviſions of the border oval. *Filaments* fix, ſubulate, a little longer than the tube on which they are placed: *anthers* roundiſh. *Styles* two, glued together: *ſtigmas* obtuſe. It has the appearance of the foregoing, but differs in having the calyx divided to the baſe, and the diviſions not linear; in the corolla alſo being ſix-cleft, and the ſtyles glued together.—It is a native of the extreme part of Italy, and is annual *.

3. Produced from *Gentiana perfoliata* and *Linum quadrifolium*. *Stem* ſimple, a ſpan in height, ſomewhat quadrangular, jointed. *Leaves* in whorls, linear, only a little broader towards the end, bluntiſh, the length of the internodes. *Pedancles* terminal, five; the fifth intermediate: each having two ſmall, oppoſite bractes in the middle, and at the end three flowers on pedicels. *Flowers* eight-cleft as in the firſt ſpecies, but the ſegments narrower.—Found in the ſouth of Europe, by Allſtroemer *.

* Withering. * Linn. ſuppl. * Linn. ſpec.

4. Calyx

4. Calyx twelve-cleft; leaflets linear, erect. Corolla longer than the calyx, divided into twelve-lanceolate segments. Stamens twelve, growing to the corolla, the length of the calyx; anthers oblong, spiral. Germ roundish. Style long, intorted; stigma simple[1].

It is a native of Virginia.

PROPAGATION AND CULTURE.

These may easily be propagated from seeds, and require only common care in the cultivation. Our common Yellow Centaury however does not thrive well in a garden, and though rather impatient of cold, yet if sheltered, it becomes mildewed[2].]

[CHLORANTHUS. (From $\chi\lambda\omega\rho\acute{o}\varsigma$, *pale*, and $\alpha\nu\theta o\varsigma$, *a flower*.)

*Lin. gen. Schreb. n.* 1730. *p.* 793. *L'Herit. sert.* 35. *t.* 2. *Swartz in Phil. transf. vol.* 77. *part* 2. *p.* 359. *t.* 14. *Juss.* 423. Nigrina. *Thunb. gen.* 58. *jap.* 5.

Class. 5. 1. Tetrandria Monogynia.

Nat. order of *Aggregatæ* 3.

GENERIC CHARACTER.

CAL. none, but an ovate, acute, concave scale, on which the germ is placed.

COR. one three-lobed, convex petal, inserted into the out-side of the germ.

STAM. *Filaments* none. *Anthers* four, inserted into the lobes of the petal on the edges towards the inside and bivalve.

PIST. *Germ* obovate, prominent in front, and bearing the petal. *Style* unequal, very short, angular. *Stigmas* three, very minute, erect.

PER. *Drupe* oblong.

SEED. *Nut* oblong, smooth.

ESSENTIAL CHARACTER.

*Cal.* none. *Cor.* a petal three-lobed by the side of the germ. *Anthers* growing to the petal. *Drupe* one-seeded.

SPECIES.

1. Chloranthus inconspicuus.
*Philos. transf.* 77. 2. *for* 1787. *p.* 360. *t.* 14. *L'Herit. sert. angl. p.* 1. & 35. *t.* 2. *Ait. hort. kew.* 1. 160.
Nigrina spicata. *Thunb. japon.* 65.

DESCRIPTION, *&c.*

As described by Swartz, it is an herbaceous plant. *Stems* many from the root, half a foot high, spreading, suberect, a little branching, round, smooth: branches opposite, spreading, round, striated, smooth. *Leaves* petioled, decussated, opposite, lanceolate-ovate, serrate, nerved, veiny, rather succulent, very smooth, pale green. *Petioles* shortish, channelled above, smooth. *Stipules* between the petioles, having two minute teeth on each side, membranaceous, permanent. *Flowers* panicled. *Panicle* terminal, erect, simple. *Racemes* or *spikes* opposite, decussated, erectish, subfastigiate. *Flowers* opposite, decussated, sessile, solitary, minute, the size of a pin's head, somewhat succulent, whitish yellow. *Pollen* yellow. *Stigmas* whitish. *Berry* black, the size of Pepper.

According to L'Heritier, it is a stoloniferous undershrub. Stems procumbent at the base, knotted, gray; the knots near the ground rooting, sometimes alternately leafless, but annulated with stipules like the rest. Leaves oblong-ovate, acute, the serratures mortified at the end, revolute, somewhat wrinkled, the same colour on both sides, spreading, flat, permanent, from two to three inches long, and from eighteen to twenty lines broad. Petioles one-fourth of the length of the leaves, ending at the base in a ring, connecting two subulate erect stipules. Panicles lax, composed of spreading decussated spikes, an inch and half long. Flowers herbaceous, a line in length. Bractea sessile, lanceolate, acute, concave, pressed close, permanent, under the spikes. Perianth double; the lower more properly a bractea, the upper only a scale. Style scarcely any. Stigma capitate, subbivalved, sometimes two-lobed.

[1] Gronovius. [2] English Botany

Fruit an oval berry, acuminated with the style, pellucid at the base.

It has some similitude to, and analogy with *Viscum* or *Loranthus*. It is said to be called *Chu-Lan* or *Tchu-lan*, by the Chinese, but must not be confounded with the *Tsjulang* or *Cynomium Chinense* of Rumphius, which is the *Vitex pinnata* of Linneus.

This plant has long been introduced into the royal garden at Kew as a native of China, where we are told it is cultivated in their gardens, though it seems not to have any qualities either palatable or odoriferous, nor has it a beautiful appearance[1].

Dr. Lind asserted, that the Chinese mix it with their Tea, to give it a pleasant smell: but this plant in itself has no smell whatever[2].

Introduced 1781, by James Lind, M.D.[3] It flowered on board the Atlas on the voyage.

PROPAGATION AND CULTURE.

It is preserved in the stove, and may be increased readily by its runners.

CHLOROXYLON. See *Laurus*.

CHOCOLATE-NUT-TREE. See *Theobroma*.]

CHONDRILLA. (Chondrilla. *Plin.* $Xονδρωλη$, *Dioscor.* From $\chi o\nu\delta\rho o\varsigma$, *a brittleness of earth, a clot or cluster.*)

*Lin. gen. n.* 910. *Reich.* 989. *Schreb.* 1235. *Gaertn. t.* 158. *Tourn.* 268. *Vaill. A. G.* 1721. 12. *Juss.* 169.

Class. 19. 1. Syngenesia Polygamia Æqualis.

Nat. order of *Compositæ Semiflosculosæ. Cichoraceæ* Juss.

GENERIC CHARACTER.

CAL. *Common* calycled, cylindric; *scales of the cylinder* very many, parallel, linear, equal; those of the *base* few, very short.

COR. *Compound* imbricate, uniform; *corollets* hermaphrodite very many, equal, in several rows. *Proper* monopetalous, strap-shaped, linear, truncated, four or five-toothed.

STAM. *Filaments* five, capillary, very short. *Anthers* cylindric, tubular.

PIST. *Germ* sub ovate. *Style* filiform, length of the stamens. *Stigmas* two, reflex.

PER. none. Calyx cylindric, oblong.

SEEDS solitary, ovate, compressed, muricated. *Pappus* hairy, stipe long, attenuated above.

REC. naked.

ESSENTIAL CHARACTER.

*Cal.* calycled. *Floscules* in many rows. *Seeds* muricated. *Pappus* simple, stipitated.

SPECIES.

1. Chondrilla juncea. *Rushy Gum-Succory.*
*Lin. spec.* 1120. *syst.* 713. *Reich.* 3. 627. *hort. cliff.* 383. *Gaertn. fruct.* 2. 363. *Hall. helv. n.* 17. *Pollich pal. n.* 731. *Villars dauph.* 3. 149. *Jacqu. austr.* 5. 12. *t.* 427. *Gouan. hort. monsp.* 409. *illustr.* 54. *Bauh. pin.* 130. *n.* 1. *D'Asso aragon. n.* 757. *Ger.* 226. *f.* 5. *emac.* 288. *f.* 5. *Mor. s.* 7. *t.* 6. *f.* 21.
Ch. viminea. *Bauh. hist.* 2. 1011. *f.* 1. *Raii hist.* 223.
C. juncea viminea arvensis. *Tabern. ic.* 178.
C. prima Dioscoridis. *Col. phyt.* 9. *t.* 3.—*t.* 10. (edit. 1592.)
C. viminalibus virgis. *Clus. hist.* 144. 2. *Park.* 782. *f.* 2.
*Radical leaves runcinate, stem-leaves linear entire.*

[2. Chondrilla crepoides.
*Lin. syst.* 713. *Reich.* 628.
*Leaves sagittate, stem-clasping, stem simple, flowers subsessile lateral,*

3. Chondrilla nudicaulis.
*Lin. syst.* 714. *Reich.* 628. *mant.* 278.
Lactuca nudicaulis. *Murr. in comm. gott.* 1772. *p.* 73. *t.* 4.
*Scape naked, flowers panicled.*

DESCRIPTIONS, *&c.*

1. *Root* perennial. *Stem* much branched, from two to three feet high, erect, at bottom strigose, towards the top smooth, bright green. Radical and lower *leaves* ovate-lanceolate, pinnatifid, sinuate-tooth-letted, decurrent, scabrous with few hairs:

[1] Swartz. [2] L'Heritier. [3] Hort. kew.

leaves higher on the ſtem and on the branches linear, tongue-ſhaped, obtuſe, quite entire (ſometimes with a toothlet or two), ſeſſile, ſmooth, glaucous-green. *Flowers* at the top and ſides of the ſtem and branches, ſometimes ſolitary, but uſually in bunches ſeſſile, but ſometimes on ſhort pedunicles. *Calyx* ſlender, ſtriated, roughiſh. *Corollas* ſlender, yellow, like thoſe of Lettuce[1]. Seeds, according to Gærtner, oblong, thicker upwards, obſcurely angular, with ruggedly tubercled ſtreaks, rufeſcent. Egret ſilky-white, ſugacious; ſtyle briſtle-ſhaped, half as long again as the ſeed.

Native of France, Switzerland, Germany, Auſtria, Italy, Spain; flowering in july, and ripening its ſeeds in ſeptember.—Cultivated 1633[2].

The juice of the whole plant is extremely bitter: in Spain however it is uſed as a ſalad herb.

2. *Stem* ſimple, uſually abſolutely ſo, a foot and a half high, purple at the baſe, ſtriated, ſet with a few white briſtles. *Leaves* reſembling thoſe of *Turritis*, undivided, oblong, rough about the edge but eſpecially along the keel with whitiſh hairs, the upper ſurface gloſſy; the loweſt leaves toothletted. *Flowers* alternate, on a peduncle ſcarcely ſo long as the calyx, with one or two bractes. *Calyx* ſtriated, ſet with black tubercles and a white briſtle: calycle very ſhort, with ſubulate, permanent leaflets. *Corolla* yellow, purpliſh underneath, the length of the calyx. Annual.—It might be placed in the genus *Crepis*[1].

3. Radical leaves runcinate, obtuſe at the end, gloſſy, toothlet-ciliated. *Scapes* few, a foot long, panicled, ſtraight, round, gloſſy, with a ſmall leaf or two on them. *Calyx* eight-leaved, gloſſy, imbricated below with a few leaflets. *Corolla* pale yellow, conſiſting of about twenty-four corollules, all forming the ray, and obtuſely five-toothed. All the ſtyles forming the diſk of the flower are concolor. *Pappus* ſeſſile. *Seeds* black[a]. The calycle is not permanent, but falls off[a].—Native of the Eaſt Indies; not of North America; and by the Egyptian pyramids; as Linnæus ſuppoſed.]

PROPAGATION AND CULTURE.

1. The firſt ſort is ſeldom preſerved in gardens, becauſe the roots are very apt to ſpread, and become troubleſome weeds. The downy ſeeds alſo are carried by the wind to a conſiderable diſtance, and fill the ground with plants. The roots ſtrike deep, and ſpread out with thick fibres on every ſide; each of theſe, when cut or broken, will ſhoot up; ſo that, when this plant has once got poſſeſſion of the ground, it is very difficult to root it out.

[The two other ſpecies have not been introduced into our gardens.

CHONDRILLA. See *Aparyia*, *Catolia*, *Catananche*, *Centaurea*, *Crepis*, *Erigeron*, *Lactuca*, *Lapſana*, *Leontodon*, *Pectis*, *Prenanthes*, *Scorzonera*, *Sonchus*.

CHONDRILLÆ GENUS. See *Cichorium*.

CHOUANNA-MANDARU. See *Baubinia*.

CHRISTIANA RADIX. See *Agrcagalus*.]

CHRISTMAS-ROSE, or FLOWER. See *Helleborus*.

[CHRISTOPHORIANA, or *Herb Chriſtopher*. See *Actæa*, *Adonis*, and *Aralia*.

CHRIST'S-THORN. See *Rhamnus Paliurus*.

CHRYSANTHEMOIDES. See *Osteospermum*.]

CHRYSANTHEMUM. (Χρυσανθεμον, *Dioſc. from* χρυσος, *gold*, and ἀνθος, *a flower*.)

*Lin. gen. n.* 966. *Reich.* 1048. *Schreb.* 1307. *Juſſ.* 183. *Gærtn. t.* 168. *Tourn.* 280. Leucanthemum. *Tourn.* Bellidioides. *Vaill. A. G.* 1720. *f.* 17. 23. 31.

Claſs. 19. 2. Syngenecia Polygamia Superflua.

Natural order of *Compoſitæ Diſcoideæ*, *Corymbiferæ* Juſſ.

GENERIC CHARACTER.

CAL. *Common* hemiſpherical, imbricate; *ſcales* cloſe incumbent; the interior ones larger by degrees; the innermoſt terminated by a parched ſcale.

COR. *Compound* radiated; *corollets* hermaphrodite tubular, numerous, in the diſk. *Females* more than twelve in the ray.

*Proper* of the hermaphrodites funnel-form, five-cleft, patulous, length of the calyx.

Of the females ſtrap-ſhaped, oblong, three-toothed.

STAM. In the hermaphrodites, *filaments* five, capillary, very ſhort. *Anthers* cylindric, tubular, ſhorter than the corolla.

PIST. In the hermaphrodites, *Germ* ovate. *Style* filiform, longer than the ſtamens. *Stigmas* two, revolute.

In the females, *Germ* ovate. *Style* filiform, equal with the hermaphrodites. *Stigmas* two, obtuſe, revolute.

PER. none. Calyx unchanged.

SEED ſolitary, oblong, without any pappus.

REC. naked, dotted, convex.

OBS. *In* Leucanthemum of *Tournefort*, *the female corollets are lanceolate, and the calycine membranes narrow.*

*In* Chryſanthemum of *Tournefort*, *the female corollets are ovate-truncate, and the calycine membranes ovate.*

Ch. ſtoſculoſum *is deſtitute of the ray.*

Ch. Leucanthemum *has black ſeeds with white ſtreaks, and a yellow cylindric hollow head.* R.

Ch. Balſamina *has a calyx almoſt like* Achillea, *and no pappus.* R.

Ch. Myconis *has ſeeds with a membranaceous crown.* R.

ESSENTIAL CHARACTER.

*Cal.* hemiſpherical, imbricated; the marginal ſcales membranaceous. *Pappus* margined. *Receptacle* naked.

SPECIES.

* *Leucanthema*: with white corollas.

1. Chryſanthemum fruteſcens. *Canary Ox-eye.*
*Lin. ſpec.* 1251. *Reich.* 3. 844. *hort. cliff.* 417. 5.
Leucanthemum canarienſe, ſapore pyrethri. *Walth. hort.* 31. *t.* 24.
Pyrethrum fruteſcens. *Gærtn. fruct.* 2. 431.
Chamæmelum canarienſe ceratophyllum fruticoſius, &c. *Mor. hiſt.* 3. 35. *n.* 7.
Bellis canar. frut. fol. craſſis, pyr. ſap. *Raii ſuppl.* 221.
Buphthalmum canar, &c. *Pluk. alm. t.* 272. *f.* 6.
*Shrubby; leaves fleſhy linear pinnate toothed trifid at the end.*

2. Chryſanthemum ſerotinum. *Creeping-rooted Chryſ.*
*Lin. ſpec.* 1251. *Reich.* 3. 844. *Jacqu. obſ.* 4. *p.* 8. *t.* 90.
Aſter fol. profunde dentatis, & quaſi laciniatis, ramoſus. *Raii ſuppl.* 162. and
Bellis americana fruteſcens ramoſa. *hiſt.* 1865.
B. major, rad. repente, fol. latioribus ſerratis. *Mor. hiſt.* 3. 29. *ſ.* 6. *t.* 9. *f.* 11. *Raii hiſt.* 351.
B. amer. procerior ſerotina ramoſa, fl. ampliſſimo. *Pluk. alm. t.* 17. *f.* 2.
*Leaves lanceolate, ſerrate at top, acuminate at both ends.*

[3. Chryſanthemum atratum. *Fleſhy-leaved Chryſ.*
*Lin. ſpec.* 1252. *ſyſt.* 772. *Reich.* 3. 844. *Allion. pedem. n.* 684.
Bellis alpina major, fol. rigido. *Bauh. pin.* 261. *prodr.* 120. *Bauh. hiſt.* 3. 115. *Hall. helv. n.* 98. *a.*
β. B. alp. minor, fol. non rig. *Bauh. hiſt.* 3. 115.
B. montana maj. fol. acuto. *Bauh. pin.* 261. *prodr.* 121.
*All the leaves wedge-ſhaped oblong gaſhed fleſhy.*]

4. Chryſanthemum alpinum. *Alpine Ox-eye.*
*Lin. ſpec.* 1253. *ſyſt.* 772. *Reich.* 3. 845. *Ger. prov.* 206. *Gouan. illuſtr.* 70. *Barrel. ic.* 431. 457? 458. *f.* 3. *Allion. pedem. n.* 685. *D'Alſo. aragon. n.* 844. *Villars dumph.* 3. 203.
Pyrethrum. *Hall. helv. n.* 96.—*& n.* 97. *ſec. Allion.*
Chamæmelum alpinum. *Bauh. pin.* 136.
Leucanthemum alp. *Cluſ. hiſt. i.* 335. 2.
*Leaves wedge-ſhaped pinnatifid, ſegments entire; flower one-flowered.*

[1] Pollich. [2] Hort. kew. from Gerarde. [1] Linn. ſyſt.
[a] Linn. mant. [a] Murray.

5. Chrysanthemum Leucanthemum. *Common Ox-eye, or great Daisy.*
*Lin. spec.* 1251. *syst.* 772. *Reich.* 3. 845. *fl. suec. n.* 763. *mat. med.* 188. *Hudf. angl.* 371. *With.* 928. *Curt. lond.* 5. 62. *Lightf.* 488. *Relh. n.* 624. *Pollich pal. n.* 812. *Allion. pedem. n.* 683. *Gærtn. fruct.* 2. 421. *Blackw. t.* 42. *Fl. ruſſ. t.* 109.
Matricaria. *Hall. helv. n.* 98. *Scop. carn. n.* 1041.
Bellis ſylveſtris, caule ſoliofo, major. *Bauh. pin.* 261.
B. major. *Fuchſ.* 148. *Camer. epit.* 635. *Ger.* 509. *emac.* 634. *Bauh. hiſt.* 3. 114. *f.* 2, 3. *Raii hiſt.* 350. *ſyn.* 184. —— vulgaris ſ. ſylveſtris. *Park.* 538. 1.
β. B. montana fol. obtuſo crenato. *Bauh. pin.* 261. *prodr.* 121. *Barrel. ic.* 458. *f.* 2. *Ger. prov.* 206.
γ. Leucanthemum vulgare, caule villis canefcente. *Tourn. inſt.* 492. *Barr. ic.* 437. *Pluk. alm. t.* 17. *f.* 3. *Gouan illuſtr.* 70. *n.*
*Leaves ſtem-claſping oblong, the upper ſerrate, the lower toothed.*
6. Chryſanthemum montanum. *Mountain Ox-eye.*
*Lin. ſpec.* 1252. *ſyſt.* 772. *Reich.* 3. 846. *Gouan hort. monſp.* 448. *Jacqu. obſ.* 4. *p.* 9. *t.* 91. *Allion. pedem. n.* 689. *t.* 37. *f.* 2. *D'Aſſo. aragon. n.* 843.
Bellis montana minor. *Bauh. hiſt.* 3. 115. *Magn. monſp.* 36.
Leucanthemum mont. minus. *Tourn. inſt.* 492.
*Bottom leaves ſpatulate-lanceolate ſerrate, upper linear.*
7. Chryſanthemum graminifolium. *Graſs-leaved Ox-eye.*
*Lin. ſpec.* 1252. *Reich.* 3. 846. *Gouan. hort. monſp.* 448. *illuſtr.* 70. *Jacqu. obſ.* 4. *t.* 92.
Bellis mont. gramineis fol. *Magn. monſp.* 291. *hort. t.* 31.
Leucanth. gramin. folio. *Tournef. inſt.* 493.
*Leaves linear; toothed at the end, or the whole length.*
8. Chryſanthemum monſpelienſe. *Montpelier Ox-eye.*
*Lin. ſpec.* 1252. *Reith.* 3. 846. *Gouan. hort. monſp.* 448. *Jacqu. obſ.* 4. *p.* 10. *t.* 93.
Bellis mont. major, fol. chryſ. cretici angullioribus. *Magn. monſp.* 306.
Leucanth. mont., fol. chryſanthemi. *Tourn. inſt.* 492.
*Lower leaves palmate, leaflets linear pinnatifid.*
[9. Chryſanthemum Balſamita.
*Lin. ſpec.* 1252. *ſyſt.* 772. *Reich.* 3. 847. *Jacqu. obſ.* 4. *p.* 8. *t.* 89.
Leucanth. orientale, coſti hortenſis fol. *Tourn. cor.* 37.
Bellidioides balſamitæ majoris folio facie & odore. *Vaill. act.* 1720. *p.* 282.
*Leaves ovate oblong ſerrate carved.*
10. Chryſanthemum inodorum.
*Lin. ſpec.* 1253. *Reich.* 3. 847. *Leers herborn. n.* 648. *Pollich pal. n.* 813. *Fl. dan. t.* 696. *With.* 929.
Matricaria inodora. *Lin. ſuec. n.* 765. *Hudſ. angl.* 372. *Allion. pedem. n.* 697.
Chamæmelum inodorum. *Fuchſ.* 144. *Bauh. hiſt.* 3. 120. *f.* 2. *Pet. brit. t.* 19. *f.* 12. *Raii ſyn.* 186. *n.* 6.
*Leaves pinnate multifid, ſtem branching diffuſed.*
11. Chryſanthemum Achilleæ. *Milfoil-leaved Chryſ.*
*Lin. ſyſt.* 772. *Reich.* 3. 847.
Parthenium fol. tenuiſſimis, Achilleæ cæſuris. *Mich. gen.* 34. *t.* 29.
*Leaves bipinnate, pinnas imbricate; ſtem ſtiff and ſtraight many-flowered.*]
12. Chryſanthemum corymboſum. *Corymbed Chryſan.*
*Lin. ſpec.* 1251. *n.* 2. *Reich.* 3. 848. *Gouan. hort. monſp.* 449. *Jacqu. auſtr.* 4. *t.* 379. *Leers herborn. n.* 649. *Pollich pal. n.* 811.
Pyrethrum corymboſum. *Scop. carn. n.* 1043. *Hall. helv. n.* 95.—corymbiferum. *Gærtn. fruct.* 2. 430.
Tanacetum inodorum. *Bauh. pin.* 132. *Cluſ. pann.* 551. 2. *hiſt.* 338. *f.* 2.
T. leucanthemum. *Tabern. ic.* 131.
Bellis montana minor tanacetifol. *Pluk. alm. t.* 82. *f.* 1.
β. T. inodorum fl. majore. *Bauh. pin.* 132. *Cluſ. pan.* 550. 1.—*hiſt.* 338. 1.
T. latifolium inod. magno bellidis fl. *Barr. ic.* 781.
*Leaves pinnate gaſh-ſerrate, ſtem many-flowered.*

** *Chryſanthemums* with yellow corollas.

[13. Chryſanthemum indicum.
*Lin. ſpec.* 1253. *Reich.* 3. 848. *Thunb. jap.* 320. *Linn. cochinch.* 499.
Matricaria ſinenſis. *Rumph. amb.* 5. 259. *t.* 91. *f.* 1.
Tsjetti-pu. *Rheed. mal.* 10. *t.* 44.
β. C. maderaſpatanum. *Pluk. alm. t.* 160. *f.* 6.
Matricaria indica. *Mor.* 3. 33.—ſinenſis fl. monſtroſo. *Vaill. act.* 1720. *p.* 285. *Lin. zeyl. n.* 421.—zeylanica hortenſis fl. pleno. *Raii ſuppl.* 224.
*Leaves ſimple ovate ſinuate angular ſerrate acute.*
14. Chryſanthemum pinnatifidum. *Cut-leaved Chryſ.*
*Lin. ſyſt.* 773. *Suppl.* 377. *Ait. hort. kew.* 3. 231.
*Shrubby, leaves ſmooth, drawn to a point at the baſe, pinnatifid; ſegments gaſhed.*
15. Chryſanthemum arcticum.
*Lin. ſpec.* 1254. *Reich.* 3. 849.
Pyrethrum. *Gmel. ſib.* 2. 203. *t.* 84.
*Leaves ſimple wedge-form ſubpalmate multifid obtuſe.*
16. Chryſanthemum pectinatum.
*Lin. ſpec.* 1255. *Reich.* 3. 849.
Chamæmelum. *Barr. ic.* 457. (flower and habit)—Leucanthemum. *Barr. ic.* 422. (leaves). C. alpinum, according to Haller.
*Leaves pinnate linear parallel acute quite entire, peduncles ſolitary one-flowered.*]
17. Chryſanthemum ſegetum. *Corn Marygold.*
*Lin. ſpec.* 1254. *Reich.* 3. 849. *fl. ſuec. n.* 762. *Hudſ. angl.* 371. *With.* 930. *Curt. lond. n.* 63. *Lightf.* 489. *Relh. n.* 625. *Fl. ruſſ. t.* 110. *Pollich pal. n.* 814. *Cluſ. hiſt.* 1. 334. 2. *Mor. hiſt.* 3. 35. *ſ.* 6. 1. 2. *f.* 1. *rew.* 2. *Pet. brit. t.* 19. *f.* 6. *Ger. emac.* 743. *f.* 1. *Park.* 1370. *f.* 1. *Raii hiſt.* 339.
*Leaves ſtem-claſping, the upper laciniate, the lower tooth-ſerrate.*
[18. Chryſanthemum Myconis. *Tongue-leaved Chryſ.*
*Lin. ſpec.* 1254. *ſyſt.* 773. *Reich.* 3. 850. *Jacqu. obſ.* 4. 10. *t.* 94. *Dalech. amp. hiſt. t.* 373. 2.
C. latifolium. *Bauh. hiſt.* 3. 105.
Bellis lutea, fol. ſubrotundis. *Bauh. pin.* 262.
*Leaves tongue-ſhaped obtuſe ſerrate, ſcales of the calyx equal.*
19. Chryſanthemum italicum.
*Lin. ſyſt.* 773. *Reich.* 3. 850. *mant.* 116. *Allion. pedem. n.* 690.
Parthenium. *Mich. gen.* 34. *n.* 6. *t.* 29. *ſec n.* 11.
*Leaves bipinnate ſerrate; rays of the flowers the length of the diſk; ſtem procumbent.*]
20. Chryſanthemum millefoliatum.
*Lin. ſyſt.* 773. *Reich.* 3. 850.
Anthemis Millefolia. *Lin. ſpec.* 1263.
Achillea. *Mill. ge.* 6. *t.* 9.—tanacetifolia. *dict. n.* 7.
Pyrethrum. *Gmel. ſib.* 2. 207. *t.* 86. *f.* 1, 2.
*Leaves bipinnate toothed, ſtem decumbent, rays of the corolla ſhorter than the diſk.*
[21. Chryſanthemum bipinnatum.
*Lin. ſpec.* 1255. *Reich.* 3. 851.
Pyrethrum. *Gmel. ſib.* 2. 205. *t.* 85. *f.* 1.
*Leaves bipinnate ſerrate villoſe, rays ſhorter than the diſk.*]
22. Chryſanthemum coronarium. *Garden Chryſanthemum. Chryſanthemum creticum, or Cretan Corn Marygold.*
*Lin. ſpec.* 1254. *Reich.* 3. 851. *hort. cliff.* 416. *t.* *Gærtn. fruct.* 2. 420.
C. creticum. *Cluſ. hiſt.* 1. 335. *Mor.* 3. 16. *ſ.* 6. *t.* 4. *f.* 2, 3. *Park. parad.* 297. *f.* 1. *Boh. eſſt. ſect.* V. 1. 6. *f.* 2, 3. *Zanon. hiſt. t.* 51.
C. fol. matricariæ—&, majus fol. profundius laciniato, magno flore. *Bauh. pin.* 134.
Matricaria. *Hall. helv. n.* 99.
*Leaves pinnate gaſhed broader outwards.*

23. Chryſan-

23. Chrysanthemum flosculosum. *Bastard Chrysanth. Lin. spec.* 1255. *syst.* 773. *Reich.* 3. 851. *Gouan, hort. monsp.* 449.
Tanacetum fol. integris rigidis dentatis, scapo uniflоro. *Hall. goett.* 370.
Balsamita fol. Agerati. *Vaill. act.* 336.
Bellis spinosa. *Bauh. pin.* 262. *Alp. exot.* 327. *t.* 326. *Mor.* 3. 29. *s.* 6. *t.* 9. *f.* 16.
[β. Cotula grandis. *Lin. spec.* 1257. *mant.* 473. *Jacqu. obs.* 4. *p.* 4. *t.* 81.
Chr. discoideum. *Allion. pedem. n.* 687. *t.* 11. *f.* 1.
*All the florets uniform hermaphrodite.*

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24. Chrysanthemum japonicum.
*Lin. syst.* 773. *Thunb. jap.* 321.
*Leaves petioled, gashed at the tip, and toothed.*
25. Chrysanthemum ceratophylloides.
*Allion. pedem. n.* 686. *t.* 37. *f.* 1.
*Stem one-flowered; pinnas deeply cut.*]
26. Chrysanthemum aragonense.
*D'Asso. aragon. n.* 845. *t.* 9. *f.* 1. *Barrel. ic.* 421.
C. pallidum. *Mill. dict. n.* 12.
*Stem one-flowered; root-leaves heaped, linear, silky, slightly three-toothed at the tip; upper stem-leaves quite entire, acute.*
[27. Chrysanthemum procumbens.
*Lour. cochinch.* 499.
Matricaria sinensis, minore flore, petalis & umbone ochroleucis. *Pluk. amalth.* 142. *t.* 430. *f.* 3.
*Leaves sinuate-gashed, blunt, stem procumbent.*]

DESCRIPTIONS, &c.

1. Stem shrubby, near two feet high, dividing into many branches. Leaves of a grayish colour, cut into many narrow segments. Flowers axillary, standing upon naked peduncles singly, and great; resembling those of common Chamomile. There is a succession of these great part of the year, for which this plant is chiefly esteemed. It grows naturally in the Canary islands.

[Cultivated 1699 in the Oxford garden[a].

2. Root perennial. Stem branched, erect, somewhat villose. Leaves sessile, smooth; on some plants with many acuminate serratures beyond the middle, on others very few towards the end only, others again quite entire. The flower approaches in size to that of *Ch. Leucanthemum*, but is sometimes only one third of the size[b].]

The roots creep far under the surface. The stems are strong, and three or four feet high. The flowers appear in september.

[Cultivated 1731, by Mr. Miller[c].

3. Radical leaves wedge-form, lobed at the tip; stem leaves lanceolate, serrate. Stem one-flowered: Calyx with a dark edge[d]. Haller makes this a variety of *Ch. Leucanthemum*, and Allioni says that it scarcely deserves to be distinguished from it.—It is found in the pastures of the Alps in Switzerland and Savoy, and in Austria. Perennial.—Introduced 1775, by Dr. Pitcairn and Fothergill[e].

4. Stems stoloniferous. Leaves petioled, pinnatifid, with seven acute, distant segments. Terminal stems entirely simple, scarce a span in length, with three or four linear leaves, usually undivided, especially the uppermost[f]. Scales of the calyx black and scarious[g]. Radical leaves now only toothed, now deeply cut with sharp segments, now with a kind of palmated end; at some times they are a little hoary, at others smooth: but these differences are owing to situation[h].

In the south of France, Switzerland, the Valais, Savoy, about Tubingen, on the Pyrenees, in Aragon, &c. Perennial.—Cultivated 1759, by Mr. Miller[i].

5. *Root* perennial, somewhat creeping. *Stem* from twelve to eighteen inches and upwards, erect, rigid, angular, at bottom often purplish and hairy, above naked, simple or little branched. *Root-leaves* on long petioles, obovate, scarcely pubescent, deeply serrate: stem-leaves alternate, sessile or stem-clasping, oblong, wedge-shaped or lanceolate, serrate, sometimes toothed, or even pinnatifid at the base. *Flowers* terminal, solitary, large and showy, on *Peduncles* finely grooved, and somewhat thicker at top. *Calyx* a flattened hemisphere: outer scales oblong-ovate, bluntish, the edge membranous and brown; inner lanceolate and pointed. *Corolla* disk yellow and convex; ray white and spreading; florets about sixteen, oblong, obtuse, having commonly three notches at the end, but sometimes entire; the styles saffron-coloured. *Seeds* attenuated to the base, deeply grooved all round, and purplish black[k]; or, according to Linnæus, black with white streaks; and a yellow cylindric hollow head: and, as Scopoli says, ten angles. By the accurate Gaertner they are described as from ovate inversely pyramidal or turbinate, at first ferruginous, beautifully variegated with ten milk-white ridges; but afterwards blackish, with the ridges pale bay-colour; the top is bald.

Very common in dry meadows and pastures, sometimes on walls, and in corn fields; flowering from may to july, and increasing greatly by seed.—The fresh leaves chewed discover a sweetish, unpleasant, slightly aromatic taste, somewhat like Parsley, but not hot or biting; they have been recommended in disorders of the breast, both asthmatical and phthisical, and as diuretics, but are now seldom called for[l].—Allioni, however, speaks with some respect of it.—The young leaves may be eaten in salads[m]; and John Bauhin relates that they use them for this purpose at Padua. According to Linnæus, horses, sheep and goats eat it; cows and swine refuse it.—Mr. Curtis mentions it as a singularity, that as so many beautiful varieties of the common Daisy are met with in almost every garden, we never see this plant in a similar state. He has, however, been credibly informed that two double varieties of this exist near Air in Scotland. Haller affirms that the varieties of this plant are innumerable, and he mentions several; among others one in which the florets of the ray are fistulous: it is highly probable, therefore, that culture would produce as many varieties of this as the common Daisy has afforded. Parkinson makes mention of it with double flowers.—Besides the common names of *Great* and *Ox-eye Daisy*, Dr. Withering mentions that the plant is called *Moon-flower*, and the flowers *Moons*.—Gerard gives us the name of *Mandlin-wort*.

6. Perennial. Stems many, erect, very hirsute at bottom, and somewhat villose at top, simple and one-flowered, but in a state of cultivation becoming branched, and approaching to *Ch. Leucanthemum*. Leaves smooth. Flower only half the size of the foregoing in its wild state, but equalling it in cultivation[n]. According to Gerard, this is only a variety of the foregoing: and Allioni is of opinion that it is scarcely different. Upon the whole, then, it seems to be only a variety of that mutable species, arising from its high situation.] Mr. Miller says, that he received it from Verona, near which place it grows in plenty.

7. [Perennial. Stems several, almost upright, simple, one-flowered. All the leaves narrow or sublinear, or else the lowest are spatulate, obtuse and serrate. The calyx has scales somewhat black. Ray of the corolla white[o].

Gouan affirms, that in all the plants which he has examined, except a few small ones growing from the fissures of rocks, the root-leaves were toothed from end to end; those indeed were only three-toothed at the tip, as in Jacquin's figure.

8. An elegant plant, without scent. Perennial, very smooth and slightly villose, with erect, branching stems. Lower leaves bipinnatifid, upper pinnatifid, one or two at top quite entire. The flowers are very like those of *Ch. Leucanthemum*[p].

9. Perennial. Stems many, erect, roundish, very slightly villose. Leaves obtuse or acute, unequally

[a] Hort. kew. [b] Jacquin. [c] Hort. kew.
[d] Linn. syst. [e] Hort. kew. [f] Linn. spec.
[g] Syst. [h] Allioni. [i] Hort. kew.
[k] Curtis, With. Woodw. Mill. Scop. [l] Curtis.
[m] Withering. [n] Jacquin. [o] Ibid. [p] Ibid.

Serrate,

ſerrate, ſmooth, attenuated to the baſe, ſeſſile: when handled they ſmell like thoſe of *Tan. Balſamita*, with which they agree alſo in colour and ſubſtance *.

According to Linneus, it reſembles *Tanacetum Balſamita* very much, but is radiated.—Stem ſubangular, branched. Leaves lanceolate-ovate, bluntiſh, ſubtomentoſe, petioled, with a ſmall ear on each ſide. It has a flower like the *After annuus*; the calyx of *Achillea*; a white ray with a yellow diſk; and no pappus *.—It was found by Tournefort in the Levant.

10. This obſcure plant is eaſily diſtinguiſhed from *Anthemis Cotula*, which it very much reſembles, by having no chaffs on the diſk of the flower: from *Matricaria Chamomilla* by its flattiſh calyx; its ſcales brown and uneven at the edge; and its hemiſpherical, not conical, receptacle; the ray of the flower ſpreading, but not bent down; and its flowers being thrice as large. *Lin. ſuec.*

*Stem* much branched, ſmooth, ſtriated, ſometimes purpliſh. *Leaves*, pinnas diſtant, twice or thrice divided, the extreme ſegments filiform: mid-rib broad, membranaceous, and ſomewhat ſtem-claſping, narrowing upwards. *Flowers* large, terminating. *Calyx*, ſcales bluntly lanceolate, unequal, with a green line along the back. Middle row of the ſcales largeſt, all more or leſs membranaceous and ſkinny. *Florets* of the ray bent back, ſublinear, three-toothed, eight or nine lines long, twenty or more; of the diſk very numerous. Greeniſh at the baſe, yellow above, ſegments lanceolate, ſpreading. *Receptacle* conical. *Seeds* truncate at each end, with four whitiſh prominent angles *: or, as Dr. Stokes deſcribes them, oblong-wedge-ſhaped, ſlightly compreſſed, brown, with three ſides and three angles, the outer ſide broadeſt, convex, ſomewhat prominent along the back, with a brownith red circular gland in each corner at the top, reſembling the eyes of ſome inſects; the two inner ſides concave; the angles ſharp, prominent and whitiſh, crowned with a very ſhallow, whitiſh, membranaceous border.

In corn fields and by road ſides, flowering from july to ſeptember. Annual.

Old authors uſually rank this plant with the Chamomiles; Linneus had placed it among the Matricarias; but on account of the ſcarioſe or ſkinny edge of the calycine ſcales, he has removed it into this genus.

11. *Stem* erect, ſomewhat angular, a foot high. *Leaves* like thoſe of Milfoil, only eight times as large, with eminent but ſcarcely viſible dots ſcattered over them, and a few white hairs underneath; the ends finiſh in a whitiſh point. Native of Italy. Perennial *. Probably this and the *italicum* are one ſpecies.—Introduced 1775, by M. Thouin *.

12. *Stem* erect, from eighteen inches to two or three feet high, and more. *Leaves* alternate, pinnas pinnate to the middle, the ſegments ſharply toothed. Scales of the *calyx* cloſely imbricate; green with a dark edge, membranaceous; and rounded at the tip. Florets of the ray to twenty in number, white, three-toothed. Diſk flat. *Seeds* crowned with their proper calycle, which is membranaceous and toothleted. The whole plant is without ſmell or taſte *. Perennial; flowering in july and auguſt.—South of France, Switzerland, Germany, Auſtria, Carniola, Hungary, Siberia, in mountainous woods.—Cultivated 1759, by Mr. Miller *.

13. Root perennial. Stem herbaceous, annual, four feet high, upright, round; branches oblique, ſubdivided, ſmooth and even. Leaves pinnate-gaſhed; the ſegments ſerrate, acute, unequal, ſmooth, waved. Flowers ſubterminating, on long peduncles, commonly one-flowered and ſolitary. All the florets ligulate. Their colours are white, red, purple, violet, yellow, orange. The flowers are three inches and more in diameter: their ſmell is of no great account.

The many varieties of this ſpecies differ not only in colour, but in ſize, and doubleneſs. Theſe are cultivated through the whole empire of Japon, for the beauty of their flowers, which diſplay themſelves during the ſummer and autumnal months *. Alſo in China and Cochinchina.

14. Reſembles the foregoing ſo much as to ſeem only a variety; but the leaves of this are oblong, not ovate, and nearly four times the ſize, as indeed all vegetables are in theſe iſlands. Found by Maſſon on the higheſt rocks of the iſland of Madeira, near the torrents *.—As the *indicum* is ſo apt to vary, this may perhaps be no more than a variety.—Introduced 1777 *.

15. *Stems* weak, diffuſed, herbaceous, branching at bottom. *Leaves* on long petioles, ſomewhat fleſhy, glofſy, three-lobed, finuate-angular. *Flowers* terminating, ſolitary, the ſame ſize as in the *carinatum*, on a ſubvilloſe peduncle. Native of Kamtſchatka and Siberia *.

16. *Stems* very ſhort, thickiſh, proſtrate, creeping. *Leaves* ſmall, like thoſe of the ſhrubby Tanſy, and pubeſcent. Peduncle very long, with a ſubulate leaf or two at the baſe. Native of Spain and Italy. Perennial *.

17. Whole plant ſmooth. *Stem* a foot or more in height, upright, ſtriated, branched. *Leaves* alternate, half-ſtem-claſping, glaucous, varying in figure, diſtantly ſerrate towards the baſe, uſually deeply toothed or jagged, with frequently three clefts at the end. Each branch is terminated by one large yellow flower. Peduncle nearly upright, hollow, thicker at top. *Calyx* convex; ſcales ovate, blunt, glaucous, the inner ones gradually larger, with membranaceous edges. *Florets* of the ray ſixteen or eighteen, oblong, truncate, about half an inch long, marked with two lines, and with three irregular teeth at the end. *Seeds* oblong, ſlightly ſtriated, truncate, a little bent, pale brown or whitiſh *. Beſides the names of *Corn-Marygold*, and *yellow* or *golden Corn-flower*, it is called *Yellow-bottle* in Kent; *Buddle*, which is a corruption of bottle, in Norfolk; *Golds*, or as it is more commonly pronounced *Gowls* or *Gowls*, in the midland counties. *Goulans* or *Goldins* in the north of England; and *Gabs*, *Gools*, *Gouls*, or *yellow Gowans* in Scotland; from the *golden* colour of the flowers, which however they may give a brilliancy to the fields in tillage, and pleaſe the eye of the paſſing traveller, as Linneus obſerves, are no very agreeable ſight to the farmer: this plant being a very troubleſome weed in ſandy ſoils. Linneus informs us, that it was imported into Sweden along with corn from Jutland, about the end of the laſt century, and that there is a law in Denmark to oblige the farmers to extirpate it.—A large quantity, which grew on arable land, was cut when in flower, dried, and eaten by horſes as a ſubſtitute for hay *. The Germans uſe it for dying yellow *. Linneus obſerves that the flowers follow the ſun remarkably. They appear from june to october, and the plant is annual.

18. This reſembles the foregoing very greatly, but the *ſtem* is erect, even and roundiſh. *Leaves* broader outwards, obtuſe, obtuſely ſerrate, even, half-ſtem-claſping. *Peduncle* terminating, ſtriated, darker, not thicker at top. *Calyx* with ſcales ſcarioſe at the tip. *Corolla* deep yellow: ray ſhort, three-toothed. Crown of the *ſeed* membranaceous *. Native of Portugal, Spain and Italy. Annual.—Introduced 1775, by Monſ. Thouin *.

19. This reſembles the next ſpecies very much, but the ſtem is more branched, many-flowered, and more erect. The ray of the flower is white, the length of the diſk. Obſerved in Italy by Arduini *. There is the ſame reference to Micheli in this and

* Jacquin. † Syſt. ‡ Woodw. Miſ. & With.
§ Linn. ſyſt. ‖ Hort. kew. ¶ Pollich.
** Hort. kew.

†† Thunberg. ‡‡ Linn. ſuppl. §§ Hort. kew.
‖‖ Linn. ſpec. ¶¶ Bald. *** Woodw. Miſ. With. Curtis.
††† Hollefear in Withering. ‡‡‡ Stokes in With.
§§§ Linn. ſyſt. ‖‖‖ Hort. kew. ¶¶¶ Linn. muſ.

the

the eleventh species; perhaps they are the same plant repeated [1].

20. Disk of the flower entirely without chaffs. It differs from the next species in the diameter of the disk not exceeding the length of the calyx; whereas in that the disk is twice as broad. It borders on the foregoing species [2]. The habit is that of Milfoil; the leaves resembles those of Milfoil, but are a little larger. It has the flowers of *Anthemis tinctoria*, but small, and pale yellow. Native of Siberia [3]. This plant is low and bushy, but the flower-stems rise near two feet high. It begins to flower in June, and continues till September. Tournefort first discovered it in the Levant [4].

21. Habit of *Anthemis tinctoria*. Pinnules of the leaves sublanceolate, hirsute, almost like those of Tansy. Peduncles axillary, naked, one-flowered, pubescent, the length of the leaves. Observed in Siberia by Gmelin [5].

22. *Stem* furrowed, leafy, branching, three feet high. *Leaves* smooth, stem-clasping; pinnas either pinnate or pinnatifid, the end one very large, bifid, with the pinnules sharply gashed. *Peduncles* terminating, one-flowered. Scales of the *calyx* ovate, scariose. *Florets* of the ray very large, broad, and short, obtusely three-toothed; in the wild plant yellow [6]. According to Gærtner, the receptacle is subparabolic, higher than the border of the calyx, tessulated with decussated streaks, naked, smooth. Seeds inversely pyramidal, a little compressed, grooved and angular, smooth, very pale straw-colour, bald.

He observes, that in the gardens the ray of this species is always barren.

He removes all the species of Chrysanthemum which have the seeds crowned with a manifest margin to the genus *Pyrethrum*: as *frutescens*, *ferstinum*, *atratum* β, *alpinum*, *inodorum*, *corymbosum*, *Myconis*, *bipinnatum*, *arcticum*; with *Matricaria asteroides*, and *Achillea pubescens*. Of *Pyrethrum* he remarks, that it is only *Tanacetum* with a ray.—Native of Crete, Sicily, the Lower Valais, and M. Fraia.]

Of this plant there are single and double flowers, both white and yellow. There is also a variety with fistular florets, called quill-leaved Chrysanthemum; but the seeds of this degenerate to the common sort.

23. [A procumbent, ever-green undershrub. Leaves obovate, gradually narrowing into the petiole, sinuate-toothed, stiffish. Flowers small, terminating, solitary [7], of a deep yellow colour.

Native of the Cape of Good Hope, and was introduced before 1605, by Parkinson [8].

β. Ever-green. Stem simple, erect, eighteen inches high, angular, purplish. Upper branches elongated, one-flowered; lower barren, leafy. Leaves stem-clasping, spatulate, finely tooth-serrate, obovate, sinuate-toothed, somewhat rigid. Flower terminating, solitary. Florets five-cleft [9]. Calyx hemispherical, composed of scales in three or four triangular rows closely imbricate, the end entire reddish brown, the inner ones scariose. Disk flat. Seeds crowned, not with a membrane, but an excavated ring. Perennial [10].

24. Stem simple, erect, striated, villose. Leaves alternate, oblong, smooth, green above, pale underneath, two inches long [11].

25. Approaches very much to *Ch. alpinum*, but differs from it in having the leaves on long petioles, and not only pinnatifid, but reaching to the very petiole; they are simple, bifid or trifid. The whole plant is extremely smooth. Stem simple, one-flowered, leafy, straight, growing to a foot in height. Flower of *C. alpinum*, but larger. Florets of the ray marked with lines, and gashed. On the mountains Tende and Briga. Perennial [12].

26. Stems low and shrubby, seldom above a foot high, putting out several slender woody branches, with narrow pale-green leaves. From the end of each branch a naked peduncle is produced six inches long, sustaining one flower of a sulphur colour. The flowers appear in June and July, but the seeds seldom ripen in England.

[Stems hoary, naked at top. Root-leaves usually three-toothed, but sometimes there are four or five teeth; they are always sharp: the lower stem-leaves are like these, but the upper ones are quite entire, and even linear. Scales of the calyx silky, with membranaceous edges. Florets in the ray three-toothed. Seeds oblong. In la Sierra de Villaroya, near Purujosa, in Aragon [13].

Query? whether different from *alpinum*.

27. Stem perennial, three feet high, frequently creeping, slender, and very much branched. Leaves ovate, deeply sinuate, subtomentose, petioled. Peduncles many-flowered, terminating. There are many varieties, but the flowers of all are small.

It is found both wild and cultivated in China and Cochinchina [14].]

PROPAGATION AND CULTURE.

1. This plant will perfect seeds in England, when the seasons are favourable; but its cuttings take root very easily during any of the summer months, the seeds are rarely sown.

Being a native of warm countries, it will not live in the open air in England during the winter; therefore when the cuttings have made good roots, they should be each planted into a separate pot, and placed in the shade till they have taken fresh root; then remove them to a sheltered situation till autumn, and thence into the green-house; giving them free air in mild weather, and frequently refreshing them with gentle waterings in winter. In summer they will require more moisture, and should be treated in the same manner as other hardier exotics.

2. Multiplies very fast by its creeping roots, and will thrive in any soil or situation.

6. Sow the seeds in a shady border; they will come up in about six weeks. Transplant them, when fit to remove, into another shady border, where they may remain, and keep them clean from weeds.

7, 12. These rarely perfect seeds in England, but being perennials, may easily be increased by parting the roots: the best time for this is in autumn.

8. This sort ripens every year in England, by which the plant is easily propagated; for if the seeds are sown in the spring on a common border, the plants will come up in six weeks; when these are fit to remove, they may be transplanted into a nursery-bed at about a foot distance every way, and kept clean from weeds till autumn, when they may be removed to the places where they are designed to remain. As these plants extend their branches pretty far on every side, they should be allowed at least two feet room; therefore they are not very proper furniture for small gardens, where there is not room for these large growing plants; but in large gardens, these may have a place for the sake of variety.

If these plants are planted in poor dry land, or upon lime-rubbish, they will not grow so vigorous as in good ground; but they will endure the cold better, and continue longer; when very succulent they are apt to rot in winter, but where they grow from the joints of old walls, they continue in vigour several years.

[17. In order to destroy this weed, Linnæus recommends to dung the ground in autumn; then to give the land a summer fallow, and to harrow in about five days after sowing.]

20. Is very hardy, will live in the open air, and may be increased easily by slips; but does not perfect seeds in England unless in warm dry seasons.

22. These plants are always esteemed as annual, so the seeds are usually sown upon a slender hot-bed

[1] Reichard. [2] Linn. syst. [3] Linn. spec. [4] Mill. dg. [5] Linn. spec. [6] Haller. [7] Gouan. [8] Hort. kew. from Lobel. [9] Linn. mant. & syst. [10] Allioni. [11] Thunberg. [12] Allioni. [13] D'Asso. [14] Loureiro.

in the ſpring, and the plants treated in the ſame manner as the African Marigold, for the culture of which we ſhall refer the reader to the article *Tagetes*; but as the plants which riſe from ſeeds, do many of them produce ſingle flowers, although the ſeeds are ſaved from the beſt double flowers, therefore many perſons now propagate theſe plants from cuttings, whereby they continue the double ſorts only; theſe cuttings, taken from the plants the beginning of ſeptember, and planted in pots, will readily take root; and if they are placed under a hot-bed-frame to ſcreen them from the froſt in winter, letting them have free air in mild weather, they will live through the winter; and in the ſpring theſe plantes may be tranſplanted into the borders of the flower-garden, where they will flower in june, and continue in ſucceſſion till the froſt puts a ſtop to them; by this method all the varieties may be continued without variation, but the plants which are propagated this way by cuttings will become barren ſoon, and will not produce ſeeds.

23. May be increaſed and treated as n. 1.

26. May alſo be propagated the ſame way, but the cuttings do not ſo readily take root. This ſort muſt be ſheltered under a common frame in winter, for unleſs the ſeaſon prove favourable, it will not live in the open air here.

[CHRYSANTHEMUM. See *Anellus*, *Anacyclus*, *Anthemis*, *Arctotis*, *Athanaſia*, *Baltimora*, *Bidens*, *Brunia*, *Buphthalmum*, *Cacalia*, *Carpeſium*, *Chryſogonum*, *Coreopſis*, *Catula*, *Eclipta*, *Ethulia*, *Helenium*, *Helianthus*, *Oſteoſpermum*, *Othonna*, *Polymnia*, *Protea*, *Senecio*, *Silphium*, *Spilanthus*, *Verbeſina*.

CHRYSIS. See *Helianthus*.

CHRYSITRIX. (*From* χρυσὸς *golden*, and θρὶξ *hair*.) *Lin. gen. Reich. n.* 1281. *Schreb.* 1610. *Juſſ.* 27.

Claſſ. 23. 3. Polygamia Dioecia.

Nat. order of *Calamariæ*. *Cyperoideæ* Juſſ.

GENERIC CHARACTER.

* Hermaphrodite Plant.

CAL. *Glumes* bivalve, many, imbricate; *valvelets* ovate-oblong, cloſe, cartilaginous, permanent.

COR. *Chaffs* extremely numerous, heaped into a faſcicle, ſetaceous, membranaceous, coloured, bright, longer than the calyx; permanent.

STAM. *Filaments* ſolitary, between the chaffs, capillary, the length of the chaffs.

*Anther* linear, growing on each filament (except the tip of the filament).

PIST. Common *Germ* oblong, obtuſe; *Style* filiform; length of the ſtamens. *Stigma* ſimple.

PER.

SEED

* Male in a diſtinct individual.

CAL. COR. STAM. as in the hermaphrodite.

ESSENTIAL CHARACTER.

HERMAPH. *Glume* bivalve. *Cor.* of numerous, ſetaceous chaffs. *Stam.* many, ſolitary, between the chaffs. *Piſt.* one.

MALE as in the hermaphrodite. *Piſt.* none.

SPECIES.

1. Chryſitrix capenſis.

*Lin. ſyſt.* 921. *Reich.* 4. 363. *mant.* 304.

DESCRIPTION, *&c.*

Root perennial. Stature of *Siſyrinchium*. *Leaves* enſiform, equitant, even, a palm or ſoot in length. *Scape* very much like a leaf, compreſſed-membranaceous, terminated by a bivalve ſpathe, one valve ſtraight as if it were continued from the ſcape; the other, which is the lower, gaping and ovate. The flower comes forth from the upper edge of the ſcape, like a faſtigiate faſcicle of golden briſtles ſtraitened by a cartilaginous perianth *.

Juſſieu remarks, that this herb has graſſy root-leaves; a compreſſed ancipital ſcape towards the top cloven on one ſide at the edge, putting forth a ſingle ſeſſile head, with a one-valved coriaceous ſpathe below it; and that the germ is ſometimes abortive. The ſtigmas are five, according to Koenig. It has the habit of the *Cyperoideæ*, but the character is a little different. The fruit is probably one-ſeeded. Native of the Cape of Good Hope.]

CHRYSOBALANUS. (*From* χρυσὸς, *gold, and* βάλανος, *a drupe. Lin.—*βαλανος *is an acorn, and is put alſo for other fruits, as cheſtnuts, beech-maſt, &c.*) *Lin. gen.* 621. *Reich.* 677. *Schreb.* 850. *Juſſ.* 340. *Icaco. Plum. gen.* t. 5. *Jacqu. amer.* 154. Span. *Icaco.* Fr. *Prunier Icaque.*

Claſſ. 12. 1. Icoſandria Monogynia.

Nat. order of *Pomaceæ*. *Roſaceæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-ſhaped, five-cleft, *diviſions* expanding, withering.

COR. *Petals* five, oblong, flat, ſpreading, inſerted by their claws into the calyx.

STAM. *Stamens* very many, placed in a circle, erect, inſerted into the calyx. *Anthers* ſmall, twin.

PIST. *Germ* ovate. *Style* of the ſhape and length of the ſtamens; inſerted laterally at the baſe of the germ. *Stigma* obtuſe.

PER. *Drupe* ovate, large, one-celled.

SEED. *Nut* ovate, marked with five furrows, wrinkled, five-valved.

OBS. *Allied to* Hirtella *in the inflorescence, flower, and inſertion of the ſtyle.*

ESSENTIAL CHARACTER.

*Cal.* five-cleft. *Pet.* five. *Style* lateral. *Drupe* with a five-furrowed, five-valved Nut.

SPECIES.

1. Chryſobalanus Icaco. *Cocon Plum.*

*Lin. ſpec.* 681. *ſyſt.* 464. *Reich.* 2. 490. *Jacqu. amer.* 154. t. 94. *pict.* 76. t. 141. *Catesb. car.* 1. t. 25? *Mill. dict.* n. 1.

Guajeru. *Marcgr. braſ.* l. 2. c. 14. *fig.*

α. Icaco fructu ex albo rubeſcente. *Plum. gen.* 44. *tr.* 158.

β. I. ſr. nigro. *Plum. gen.* 44.

γ. I. fr. purpureo. *Plum. gen.* 44.

C. purpurea. *Mill. dict. n.* 2.

δ. C. fruticoſus. *Brown. jam.* 250. t. 17. f. 5.

DESCRIPTIONS, *&c.*

[1. It is deſcribed by Jacquin, as an irregular ſhrub, from three to ten feet high, covered with a ferruginous bark with pale ſpots. Leaves ovate-roundiſh, obtuſe, entire, coriaceous, ſhining, on very ſhort petioles, alternate, two inches long. Racemes branched, corymbed, lax, terminating and axillary, ſhort; the laſt common peduncles three-flowered. Flowers inodorous, ſmall, with white petals, having almoſt the character of the Plum. Fruits roundiſh, about an inch in diameter, either quite entire, or with five, ſix or ſeven grooves; red, purple, yellow, whitiſh or variegated, but never blue, as Cateſby deſcribes it. Whence the ſhrub of the Bahama iſlands may perhaps be a different ſort. The ſkin is very thin, and the pulp is ſmall, white, with very little ſmell, adhering very firmly to the nut, the conſiſtence of a baked apple, the taſte ſweet with ſome auſterity, but not unpleaſant. They are ſold in the markets in the Weſt-Indies, and are eaten both raw and preſerved. The nut or ſtone varies in form, but approaches to the ovate-acuminate, and ſometimes has ſix or ſeven angles.

Native of the Caribbee iſlands, and the neighbouring continent, near the ſea.]

γ. Leaves compounded of ſeveral winged leaflets, branched out oppoſite, each having ſix or ſeven pairs of pinnas, the ſtones of the ſame ſhape with thoſe of the other. Native of Jamaica.

[δ. Height ſeven or eight feet. Fruit like a plum, black or white, inſipid, but containing a large nut, which incloſes a kernel of a very pleaſant flavour. It thrives beſt in a cool moiſt ſoil, and when planted in a dry ſunny expoſure, the nut is covered only by a thin ſkin. This ſhrub is very common in St. Elizabeth's and Portland, in Jamaica *.—Cultivated 1752, by Mr. Miller *.

Linneus being acquainted only with the laſt, doubts whether all theſe be different ſpecies, or varieties only of one.—Of δ he ſays, that it has

* Lian. mant.

* Browne. * Hort. kew.

not a ſcabrous ſtem; that the leaves are alternate, roundiſh, quite entire, ſubmarginate; that the flowers are in a panicle; and that the pedunculs are rounded on the outſide, and flat within.]

PROPAGATION AND CULTURE.

As theſe trees are natives of the hot parts of America, they will not thrive in England unleſs they are kept in a warm ſtove. They are propagated by ſeeds, which muſt be obtained from the countries where the plants naturally grow; theſe muſt be ſown in the ſpring in ſmall pots filled with light earth, and plunged into a hot-bed of tanner's bark, obſerving frequently to water the pots, but not to let them have much at each time. In ſix weeks the plants will come up, and, if properly managed, will be fit to remove in a month after, when they ſhould be carefully ſeparated, and each planted into a ſmall pot filled with light kitchen-garden earth, and then plunged into the hot-bed again, obſerving to ſhade them from the ſun till they have taken freſh root; after which they muſt have air every day in proportion to the warmth of the ſeaſon, and their waterings during the ſummer ſhould be frequent, but ſparing. In the autumn the plants muſt be removed into the bark-ſtove, and plunged into the tan-bed; and in winter the plants muſt not have too much water, leſt it occaſion their throwing off their leaves. In ſummer they muſt have a good ſhare of air, and the plants in the ſtove ſhould be conſtantly treated in the ſame manner as other tender plants from the ſame countries.

CHRYSOCOMA. (Chryſocoma, *Plin.* Χρυσοκομη, *Dioſc. From* χρυσος, *gold, and* κομη, *the head of hair; the head, flowering or leafy top of trees and herbs.*)

Engl. *Goldy-locks.*

*Lin. gen.* 939. *Reich.* 1019. *Schreb.* 1275. *Gærtn. t.* 166. *Juſſ.* 180. *Chryſocomæ. Dill. gen.* 14. *Coma aurea. Boerh. i. p.* 121.

Claſſ. 19. 1. Syngeneſia Polygamia Æqualis.

Nat. order of *Compoſitæ Diſcoideæ. Corymbiferæ* Juſſ.

GENERIC CHARACTER.

CAL. *Common* hemiſpherical, imbricate, *ſcales* linear, outwardly convex, acuminate.

COR. *Compound* tubular, longer than the calyx; *Corollets* hermaphrodite, tubular, numerous, equal. *Proper* funnel-form, *border* five-cleft, revolute.

STAM. *Filaments* five, filiform, very ſhort; *Anthers* cylindric, tubular.

PIST. *Germ* oblong, crowned. *Style* filiform; ſcarce longer than the florets. *Stigmas* two, oblong, depreſſed, involute.

PER. none. Calyx ſcarcely changed.

SEEDS ſolitary, ovate-oblong, compreſſed. *Pappus* hairy.

REC. naked, flat.

OBS. C. Linoſyris *is diſtinguiſhed by its ſquarroſe calyx.*

ESSENTIAL CHARACTER.

*Cal.* hemiſpherical, imbricate. *Style* ſcarcely longer than the florets. *Pappus* ſimple. *Recept.* naked.

SPECIES.

* Shrubby.

[1. Chryſocoma oppoſitifolia. *Oppoſite-leaved Goldy-locks.*

*Lin. ſpec.* 1177. *Juſſ.* 739. *Reich.* 3. 724. *amœn.* 6. *afr.* 49. *p.* 97.

Eupatorium divaricatum. *Berg. cap.* 239.

Cyanus arb. minor, fol. majoranæ. *Breyn. ic. t.* 17. *f.* 2.

*Shrubby; leaves oppoſite, obovate, flowers faſcicled, pedunculed.*]

2. Chryſocoma comaurea. *Great ſhrubby Goldy-locks.*

*Lin. ſpec.* 1177. *Reich.* 3. 725.

Conyza. *Pluk. alm. t.* 327. *f.* 2.

Elichryſum. *Volk. norib. t.* 148.

*Shrubby; leaves linear, ſtraight, ſmooth, decurrent by the back.*

[3. Chryſocoma ſericea.

*Lin. ſyſt.* 739. *ſuppl.* 360.

*Shrubby, ſilky-white; leaves linear, channelled; ſmall branches panicled at top.*

4. Chryſocoma montana.

*Vahl. ſymb. t.* 70.

*Shrubby, leaves oblong, quite entire, flowers ſolitary.*

5. Chryſocoma patula.

*Lin. ſyſt.* 739. *Reich.* 3. 725. *mant.* 280. *Berg. cap.* 234.

*Underſhrubby; leaves linear, ſmooth; branches divaricate.*]

6. Chryſocoma cernua. *Small ſhrubby Goldy-locks.*

*Lin. ſpec.* 1177. *Reich.* 3. 725. *hort. cliff.* 397. 3.

Coma aurea africana fruticans, fol. linariæ anguſtis, major. *Comm. hort.* 2. 89. *t.* 45.

*Shrubby; leaves linear, recurved, ſubſcabrous; flowers during impregnation drooping.*

7. Chryſocoma ciliata. *Heath-leaved Goldy-locks.*

*Lin. ſyſt.* 1177. *Reich.* 3. 726.

Coma aurea frut. ericæ fol. *Comm.* 2. 95. *t.* 48.

*Underſhrubby; leaves linear, ſtraight, ciliate; branches pubeſcent.*

[8. Chryſocoma tomentoſa.

*Lin. ſyſt.* 739. *Reich.* 3. 726.

*Underſhrubby; leaves and branches tomentoſe.*

9. Chryſocoma ſcabra.

*Lin. ſpec.* 1177. *Reich.* 3. 726.

Bacciaris. *Lin. hort. cliff.* 404. 2.

Conyza africana. *Dill. elth.* 104. *t.* 88. *f.* 103.

*Underſhrubby; leaves lanceolate-ovate, recurved, toothleſs-ſerrate; pedunculs pubeſcent.*]

** *Herbaceous.*

10. Chryſocoma Linoſyris. *German Goldy-locks.*

*Lin. ſpec.* 1178. *Reich.* 3. 726. *ſ. ſuec. n.* 729. *Gærtn. fruct.* 2. 403. *Hall. helv. n.* 144. *Pollich pal. n.* 778. *Allion. pedem. n.* 634. *t.* 11. *f.* 2. *D'Alſo. Arag. n.* 803. *Villars dauph.* 3. 188.

Chryſocome dioſcoridis & plinii. *Col. ecphr.* 1. 81. *t.* 82. *Park.* 688. *f.* 1.

Linoſyris nuperorum. *Lob. hiſt.* 223. *ic.* 1. 409. *Ger. emac.* 553. *f.* 9.

Oſyris auſtriaca. *Cluſ. hiſt.* 1. 325.

Linariæ tertium genus. *Trag.* 358.

L. folioſo capitulo luteo, major & minor. *Bauh. pin.* 213.

L. aurea. *Ger.* 442. 8. *Raii hiſt.* 292.

*Herbaceous; leaves linear, ſmooth; calyxes lax.*

11. Chryſocoma biflora. *Two-flowered Goldy-locks.*

*Lin. ſpec.* 1178. *Reich.* 3. 726.

After. *Gmel. ſib.* 2. 189. *t.* 82. *f.* 1.

Conyza. *Amm. ruth.* 192.

*Panicled; leaves lanceolate three-nerved dotted naked.*

[12. Chryſocoma villoſa.

*Lin. ſpec.* 1178. *Reich.* 3. 727. *Pall. itin.* 1. 73. *Gærtn. fruct.* 2. 403. *Lour. cochinch.* 486.

After. *Gmel. ſib.* 2. 192. *t.* 82. *f.* 2, 3.

*Leaves lanceolate, villoſe, calyxes cloſe.*

13. Chryſocoma purpurea.

*Forſt. ſtirpl. auſtr. n.* 286.

*Herbaceous; leaves elliptic-lanceolate ſubſerrate pubeſcent; panicle terminating corymbed.*

DESCRIPTIONS, *&c.*

1. A ſhrub, with brachiate diſtorted branches. Leaves ſubpetioled, ſubtomentoſe, extremely obtuſe. Flowers yellow, terminating. Calyxes cylindric, obtuſe, ſhorter than the corolla. This differs as much from its congeners, as it agrees with *Pteronia oppoſitifolia* in outward appearance, calyxes, ſtem, &c. but the receptacle is naked*. Native of the Cape.]

2. The ſecond ſort grows alſo naturally at the Cape of Good Hope. This riſes with a ligneous ſtalk about a foot high, dividing into many ſmall branches, which are garniſhed with narrow leaves, of a deep green, coming out on every ſide without order; the back part of each leaf has a ſmall ſhort appendix, which runs along the ſtalks. The flowers are produced at the end of the branches, on ſlender naked foot-ſtalks, and are of a pale yellow. This plant flowers great part of the year, for which it is

* Linn. amœn. & ſyſt.

chiefly

chiefly efteemed; and the feeds ripen very well in autumn.

[Cultivated 1748, by Mr. Miller [a].

3. This is eaſily diſtinguiſhed by its very white ſilky leaves, branches and peduncles, and by its yellow flowers. Leaves long, flaccid. Branchlets ſimple, but with panicles of flowers at the ends: the ſhorter branchlets terminated with a few-flowered panicle. Calyxes ſmooth; with ſubulate, yellow ſcales. The bark and wood have an acrid pungent taſte. It differs from *C. tomentoſa* in its panicled branches, not one-flowered; in having leaves near an inch in length, and flowers much ſmaller; beſides being ſo much whiter.—Theſe two are natives of Spain, and this is uſed by the inhabitants againſt the tooth-ach [b].

4. Stem ſhrubby, with round villoſe branches. Leaves acute, villoſe. Flowers ſingle at the ends of the branches. The outer ſcales of the calyx oblong, obtuſe, coloured at the tip, ſpreading; the inner longer, linear, acute. Egret the length of the calyx, ferruginous. Forſkal gathered it on mount Horeb [c].

5. Stem compound, with the branches by threes or fours, even. Leaves obtuſe, ſpreading. Flowers terminating, ſolitary, ſcarcely peduncled. Nearly related to *C. Cinnarea*, but diſtinguiſhed by the extreme divaricating of the branches, and the flowers being ſcarcely peduncled. Native of the Cape [d].]

6. The ſixth ſort is a native of the Cape of Good Hope; this is a leſs plant than the ſecond; it has a ſhrubby ſtalk, branching out in the ſame manner; the leaves are ſhorter, and a little hairy; the flowers are not half ſo large, of a pale ſulphur colour, and nod on one ſide before they are blown. This alſo flowers great part of the year, and ripens ſeeds very well.—[Cultivated 1739, by Mr. Miller [e].]

7. The ſeventh ſort is alſo a native of the ſame country; this has a low ſhrubby ſtalk, which branches out on every ſide, leaves very narrow, ſhort, rough, and reflexed; the flowers ſtand ſingle on the top of naked peduncles, which ariſe from the upper part of the branches; theſe flowers are larger than thoſe of the laſt, and ſtand erect.

[Introduced 1774, by Mr. Fr. Maſſon [f].

8. Leaves linear, ſtraight. Flowers as in the others [g].

9. Height nine or twelve inches, about the middle dividing into many woody branches covered with a brown bark, and theſe into ſmaller green ones, on which are very narrow, ſubhirſute, alternate leaves. Peduncles long, ſlender, with a few ſmall leaves on them. Heads of flowers at firſt roundiſh, not hirſute; afterwards longer, and contracted towards the end. Scales of the calyx many, narrow, green. Corollas very ſmall, yellow. It flowers in auguſt and ſeptember; and is a native of the Cape [h].]

10. The tenth ſort grows naturally in Germany, Switzerland, France, Italy, &c.; this has a perennial root; the ſtalks riſe two feet and a half high, are round, ſtiff, and cloſely garniſhed with long, narrow, ſmooth leaves, which come out without any order, of a pale green colour; the upper part of the ſtalk divides into many ſlender peduncles, each ſuſtaining a ſingle head of flowers, of a bright yellow, and diſpoſed in form of an umbel.

[The peduncles ſwell under the flower, according to Haller and Pollich; this Allioni denies.—Very ſhort briſtles on the receptacle. Pappus grows reddiſh by age. The plant, when handled, ſends forth a very fine aromatic ſmell [i].—Cultivated 1683, by Mr. James Sutherland [k].]

11. Root perennial, creeping, ſpreading on every ſide to a conſiderable diſtance, ſending up many erect ſtalks, with flat ſpear-ſhaped leaves, ending in points; theſe are rough, and halve three longitudinal veins; the upper part of the ſtalks branch out, and form looſe panicles of yellow flowers, which are larger than thoſe of the former ſort. This flowers in june and july, and the ſeeds ripen in autumn.

[Cultivated 1759, by Mr. Miller [l].

12. Stem a foot and half high, upright, round, hoary, branched. Leaves quite entire, hoary, alternate, ſeſſile. Lower part of the ſtems naked; flowering-branches ſcarcely an inch long, and not much ſubdivided, ſometimes three inches long and more ſubdivided; all of them however reach the top of the ſtem, ſo as that the flowers together form a ſort of umbel. Flowers yellow. Calyx hairy. Seeds ſmall, hirſute, crowned with dun-coloured hairs. Native of Siberia [m].

13. Found in the iſle of Tanna the 12th of auguſt 1774 [n].]

PROPAGATION AND CULTURE.

Moſt of theſe plants are perennial, and natives of the Cape of Good Hope. They may be increaſed by cuttings, which, if planted in a common border in any of the ſummer months, and covered with hand-glaſſes, will eaſily take root, provided they are ſhaded from the ſun, and duly watered: when theſe have gotten good roots they ſhould be carefully taken up, and each planted in a ſeparate pot, filled with light earth, placing them in the ſhade till they have taken new root; then they may be expoſed with other hardy exotic plants till autumn, when they muſt be removed into the green-houſe during the winter ſeaſon; they ſhould enjoy a large ſhare of free air in mild weather, for they only require protection from froſt, and muſt not be too tenderly treated.

Some of them, as the ſecond and ſixth, ripen their ſeeds very well, and may be increaſed by ſowing theſe in the ſpring on a border of light earth; but the way of raiſing them by cuttings is more expeditious, and therefore moſt common.

10. In favourable ſeaſons the ſeeds of this ſort will ripen in ſeptember; but the ſeedling plants do not flower till the ſecond or third year: the moſt general method therefore of increaſing it, is by parting the roots. The beſt time for this, and for removing the plants, is ſoon after the ſtalks decay in autumn, that the plants may get freſh roots before winter. In a dry looſe ſoil, it will increaſe very faſt by the roots, and live in the open air; but in ſtrong wet land the roots often rot in winter.

11. Propagates too faſt by its creeping roots to be admitted into the flower-garden, for the roots will often extend two or three feet every way in the compaſs of one year, ſo that they will interfere with the neighbouring flowers; but as the plants will grow in any ſoil or ſituation, a few roots may be planted on the ſide of extenſive rural walks round the borders of fields, where they will require no care, and their flowers will make a good appearance, and continue long in beauty.

[CHRYSOCOMA. See *Graphalium*.

——— dichotoma. See *Conyza lanceolata*.

——— graminifolia. See *Solidago lanceolata*.

CHRYSOCOME. See *Chryſocoma*, *Graphalium*, *Xeranthemum*.

CHRYSOGONUM. (Χρυσογωνιος, *Diſſc. From* χρυσος, *gold, and* γονυ, *the knee, or a joint, q. Golden-joint.*) *Lin. gen. n.* 988. *Retzb.* 1071. *Schreb.* 1337. *Gartn. t.* 174. *Juſſ.* 188.

Claſſ. 19. 3. Syngeneſia Polygamia Neceſſaria.

Nat. order of *Compoſitæ Oppoſitifoliæ*. *Corymbiferæ* Juſſ.

GENERIC CHARACTER.

CAL. *Common* five-leaved, flat, ſpreading; *leaflets* lanceolate, nearly the length of the flower.

COR. *Compound* radiate. *Corollets* hermaphrodite, very many in the diſk; *females* five in the ray.

*Proper*, in the Hermaphrodites funnel-form, five-toothed, erect.

In the *Females* ligulate, oblong, truncate, three-toothed.

[a] Hort. kew.
[b] Linn. mant.
[c] Linn. ſyſt.
[d] Hort. kew.
[e] Dillenius.
[f] Hort. kew.
[g] Linn. ſuppl.
[h] Thunb.
[i] Allioni & Pollich.
[k] Hort. kew.
[l] Gmelin. & Lourciro.
[m] Pallas.
[n] Forſter.

STAM. In the Hermaphrodites, *filaments* five, very small. *Anthers* cylindrical, tubular.
PIST. In the Hermaphrodites *Germ* very small. *Style* setaceous, length of the corollet. *Stigma* obscure.
In the females *Germ* larger, covered with its proper perianth. *Style* shorter. *Stigmas* two, revolute.
PER. None. Calyx unchanged.
SEEDS of the Hermaphrodites none.
Of the Females solitary, inverse-heart-shaped, depressed-quadrangular, with the sides width; crowned with a three-toothed scale gaping inwards, contracted towards the base. Each seed lies concealed within it's proper four-leaved *Glume*, the outward scale being ovate and wider: the three remaining ones very narrow, closely converging, and gaping when the seed is ripe.
REC. chaffy, flat; chaffs linear, obtuse.

ESSENTIAL CHARACTER.

*Cal.* five-leaved. *Seed* involved in a four-leaved calycle. *Pappus* one-leafed, three-toothed. *Recept.* chaffy.

SPECIES.

1. Chrysogonum virginianum.
*Lin. spec.* 1303. *Reich.* 3. 923. *hort. cliff.* 424. *Gron. virg.* 133. 106. *Gærtn. fruct.* 2. 436.
Chrysanthemum virg. villosum, disco luteo, quinquepetalis crenato. *Pink. alm. t.* 83. *f.* 4? & *t.* 242. *f.* 3. *Raii suppl.* 213.

DESCRIPTION, *&c.*

Leaves resembling those of *Lamium purpureum*, or common Baum, moderately hairy, opposite on long petioles. On the top a golden flower[2].
Chaffs of the receptacle different: those of the disk simple, linear-oblong, obtuse, concave, pubescent on the outside, one to each floret; those of the ray compound, four to each floret, united into a sheath for the seed, the outer one larger than the rest, obovate, convex on one side, concave on the other, lying on the back of the seed, the three inner ones narrow, linear-oblong, closing the aperture left by the outer, so that two cover the sides of the seed, whilst the third is on the middle of the belly, and bears the germ of the barren floret before it. Seeds obovate, convex without, concave within, having two obscure grooves on them, and of a pale bay colour. Pappus membranaceous, one-leafed, turbinate, shorter by half than the seed, opening inwards, and having six teeth or fewer on the upper margin[3].
Native of Virginia, where it was first observed by Gronovius.

CHRYSOGONUM. See *Leontice* & *Zinnia*.]

CHRYSOPHYLLUM. (*From χρυσὸς & φύλλον; golden leaf.*)
*Lin. gen.* 263. *Reich.* 282. *Schreb.* 355. *Brown.* 171. *Juss.* 152. Cainito *Plum.* 9. *Jacqu. amer.* 51.
Class. 5. 1. Pentandria Monogynia.
Nat. order of *Dumosæ*. *Sapotæ* Juss.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, small: *leaflets* roundish, obtuse, permanent.
COR. monopetalous, bell-shaped: *border* five-cleft; (ten-cleft. *Juss.*) *segments* roundish, very much expanded, shorter than the tube.
STAM. *Filaments* five, subulate, placed on the tube, converging. *Anthers* roundish, twin, incumbent.
PIST. *Germ* roundish. *Style* very short. *Stigma* obtuse, subquinquefid.
PER. *Berry* globular, ten-celled, large.
SEEDS solitary, bony, compressed, marked with a scar, shining.

ESSENTIAL CHARACTER.

*Cor.* bell-shaped, ten-cleft; segments alternate, spreading. *Berry* ten-seeded.

SPECIES.

1. Chrysophyllum Cainito. *Bread-leaved Star-apple.*
*Lin. spec.* 278. *Syst.* 231. *Reich.* 535. *hort. cliff.* 491. *Jacqu. amer.* 51. *t.* 37. *f.* 1. *pict.* 30. *t.* 51.

α. Cainito. *Loef. amer.* 390. *Plum. gen.* 10. *ic.* 69. Sideroxylon Pacurero. *Loef. it.* 204.
β. C. jamaicense, fructu purpureo. *Jacqu. amer.* 52. *pict.* 31. *Brown. jam.* 171. *t.* 14. *f.* 2.—*Lin. y. See n.* 4.
Anona. *Sloan. jam.* 2. 170. *t.* 229. *Raii dendr.* 78.
γ. C. (cæruleum) fr. cær. globoso. *Jacqu. amer.* 52. *t.* 37. *f.* 1. *pict.* 31. *t.* 52.—*Lin.* 4.
δ. C. (microphyllum) fol. minoribus. *Jacqu. amer.* 53. *t.* 37. *f.* 2. *pict.* 31. *t.* 53.
*Leaves ovate, striated in parallel lines, tomentose and shining underneath.*
2. Chrysophyllum argenteum. *Narrow-leaved Star-apple.*
*Lin. syst.* 232. *Jacqu. amer.* 53. *t.* 38. *f.* 1. *pict.* 31. *t.* 54.
*Leaves sickle-ovate, shining and tomentose underneath.*
3. Chrysophyllum glabrum. *Smooth-leaved Star-apple.*
*Lin. spec.* 278. *Syst.* 232. *Reich.* 536. *Jacqu. amer.* 53. *t.* 38. *f.* 2. *pict.* 31. *t.* 55.
*Leaves quite smooth on both sides.*
*Species from Swartz.*
[4. Chrysophyllum monopyrenum.
*Swartz prodr.* 49.
Ch. 2. *Brown. jam.* 171.
*Leaves elliptic acuminate, golden-tomentose beneath, fruit ovate one-seeded.*
5. Chrysophyllum microcarpum.
*Swartz prodr.* 49.
*Leaves ovate smooth, pubescent beneath, berries oblique oblong one-seeded.*
6. Chrysophyllum rugosum.
*Swartz prodr.* 49.
*Leaves oblong acuminate smooth on both sides, fruit acuminate wrinkled.*

DESCRIPTIONS, *&c.*

1. Leaves alternate, petioled, quite entire. Peduncles lateral, one-flowered, numerous, very short[1]. —Cultivated 1739, by Mr Miller[2].
Brunne has two species of Chrysophyllum, which he calls 1. Star Apple-tree, and 2. Damson Plum. The latter is made a distinct species by Swartz. See n. 4. Both have the leaves ferruginous underneath. The fruit of the first is larger and globular: of the second, smaller and smooth. The last, he says, is found wild in many parts of Jamaica, but seldom grows to any considerable size: the first is cultivated all over the country, and thrives with very little care; it rises commonly to a considerable size, and spreads much; but its branches, like those of the other sort, are very slender and flexile, and hang down when charged with fruit. This, like the *Achras*, (to which it is very nearly allied) is full of milk, and the fruit retains it even in the most perfect state; but though this juice be rough and astringent in the bark, &c. and even in the fruit before it ripens; yet when it grows to full perfection, it becomes sweet and gelatinous, with an agreeable clamminess, and is very much esteemed. The juice of this fruit, a little before it is perfectly ripe, being mixed with a small quantity of orange juice, binds the body extremely, and doubtless would make a very powerful remedy on many occasions; or eating the two fruits together would have the same effect. Perhaps the action of the fire might take off much of the native roughness of the juice, if it were to be inspissated by that means. The germ has ten distinct cells, but most of the seeds are abortive, and when the fruit is ripe, it seldom contains above four or five[3].
These vary chiefly in the fruit, which in a is very large, flattish, rose-coloured, with a slight mixture of yellow and green; the rind is thin and smooth; the pulp softish, somewhat glutinous, milky before it is ripe, flesh-coloured near the circumference, dirty white within, of a sweet insipid taste. The Americans are fond of it, but it is rarely eaten by the Europeans. Seeds brown, with a white rough edge; seldom more than three or four ripen. Native of Martinico and Domingo.

[2] Raii suppl. from Bobart.
[1] Lion. spec. [2] Hort. kew. [3] Brown. jam.


β. The

β. The fruit of this is ſubovate, with a green or purple rind; the pulp alſo purple, and ſomewhat better flavoured than the foregoing. Native of Jamaica, where it is called Star-apple.

γ. Fruit almoſt globular, entirely blue, and only one-third of the ſize of the other. Pulp blue, ſofter, but nearly of the ſame taſte. Native of Martinico.

3. This is an erect ſhrub, growing ſcarcely ten feet in height; and the leaves hardly an inch and half in length. It is common in the Havannah[x].

Miller refers to the *argenteum* and *glabrum* of Jacquin, but by his deſcriptions he intends the *Damſon-Plum* of Browne by his firſt, and the *Star-Apple-tree* of the ſame author by his ſecond ſpecies. See n. 1. a and β, which laſt is the ſame with n. 4.

2. The leaves of this are green and ſmooth on their upper ſurface, without the parallel lines which mark the foregoing; underneath they are of a ſilvery ſhining green. The fruit is roundiſh, of a dirty blue purple, the ſize of a middling plum, and eatable; the pulp is ſoft, blueiſh, ſlightly milky, and has the taſte of the others. It is a native of Martinico[y].

According to Mr. Aiton's catalogue of the royal garden at Kew, it was cultivated by Mr. Miller in 1758.

3. This tree grows fifteen feet in height, erect and branching. Leaves ovate, acute, quite entire, ſhining on both ſides, petioled, hardly two inches in length. Fruit blue, the form and ſize of a ſmall olive, with the taſte of the foregoing; but ſeldom eaten except by ſlaves and children[z].

4, 5, 6. Theſe, with the other ſpecies, are natives of the Weſt-Indies. The fourth is the ſame with variety β of the firſt ſpecies. The fifth is found in Hiſpaniola; and the ſixth in Jamaica[a].

PROPAGATION AND CULTURE.

Theſe trees are preſerved in ſeveral curious gardens for the beauty of their leaves, eſpecially the firſt ſort, whoſe under ſides ſhine like ſattin, the upper ſides are of a deep green. The leaves continue all the year, and make a very pretty appearance in the ſtove at all ſeaſons.

Theſe trees, being natives of the hotteſt parts of the world, cannot be preſerved in this country, without being kept in the warmeſt ſtoves; and ſhould always remain in a hot-bed of tanners bark, otherwiſe they will make but little progreſs. They are propagated by ſeeds, which muſt be procured from the places of their growth, for they do not produce fruit in Europe. Theſe ſeeds muſt be freſh, otherwiſe they will not grow; and if they are ſent over in ſand, it will preſerve them from drying too much; when the ſeeds arrive, they muſt be ſown as ſoon as poſſible in ſmall pots filled with light freſh earth, and plunged into a good hot-bed of tanners bark. If the ſeeds are good, and the bed in a proper temperature of warmth, the plants will appear in five or ſix weeks; and in about two months after, will be ſtrong enough to tranſplant; in doing which, the plants, with all the earth, ſhould be ſhaken out of the pots very carefully, and ſeparated with their roots entire, and each planted into a ſingle ſmall pot filled with freſh rich earth, and plunged again into a hot-bed of tanners bark, watering and ſhading them until they have taken freſh root. If the hot-bed in which theſe plants are plunged, is from time to time ſtirred, and a little freſh tan added to it, to renew the heat when it declines, the plants will make good progreſs, and in three or four months will be near a foot high, and may then be ſhifted into pots a ſmall ſize larger than thoſe they before were in. If theſe plants are conſtantly kept in a warm bed in the ſtove, and ſhifted twice a year, to renew the earth to their roots, they will thrive very faſt, and put out their ſide branches, ſo as to make a handſome appearance in the ſtove, with other curious plants of the ſame country; for though they do not produce either flowers or fruit, yet as they keep their leaves through the year, which are ſo very beautiful, they deſerve a place in the ſtove, better than moſt other plants. The chief care they require, is to keep them conſtantly in a proper degree of heat, and never to put them into too large pots; and in winter they ſhould not have too much water, about twice a week will be often enough to water them; and in the depth of winter they ſhould not have much at each time.

Theſe trees are frequently propagated in the Weſt-Indies, by planting their branches (as I have been informed by perſons of credit;) but I have not heard of their being propagated in England by that method.

[CHRYSOPHYLLUM. See *Jacquinia* & *Sideroxylon*.

Chryſoſplenii foliis. See *Diſandra*.]

CHRYSOSPLENIUM. (*From* χρυσος *and* σπλην, *the ſpleen; on account of the golden colour of the flowers, and the ſuppoſed virtue of the plant in diſeaſes of the ſpleen.*) *Golden Saxifrage.*

*Lin. gen. n.* 558. *Reich.* 607. *Schreb.* 763. *Gærtn. t.* 44. *Tournef.* 60.

Claſſ. 10. 2. Decandria Digynia.

Nat. order of *Succulentæ*. 2.

GENERIC CHARACTER.

CAL. *Perianth* four or five-parted, ſpreading, coloured, permanent: *diviſions* ovate, the oppoſite ones narrower.

COR. none, unleſs the coloured calyx be called ſo.

STAM. *Filaments* eight or ten, ſubulate, erect, very ſhort, placed in an angular receptacle. *Anthers* ſimple.

PIST. *Germ* inferior, ending in two ſubulate *Styles*, the length of the ſtamens. *Stigmas* obtuſe.

PER. *Capſule* two-beaked, two-parted, one-celled, two-valved, ſurrounded with the green calyx.

SEEDS very many, very ſmall.

OBS. *The terminating flower is four-cleft; the others are later and four-cleft.*

ESSENTIAL CHARACTER.

*Cal.* four or five-cleft, coloured. *Cor.* none. *Capſ.* two-beaked, one-celled, many-ſeeded.

SPECIES.

1. Chryſoſplenium alternifolium. *Alternate-leaved Golden Saxifrage.*

*Lin. ſpec.* 569. *Reich.* 2. 307. *fl. lapp. n.* 151. *ſuec. n.* 365. *hort. cliff.* 149. *Gærtn. t.* 208. *Hudſ. angl.* 179. *With.* 402. *Lightf.* 219. *Sowerby Engl. Bot. t.* 54. *Hall. helv. n.* 1348. *Scop. carn. n.* 487. *Pollich pal. n.* 400. *Leers. herb. n.* 312. *Allion. pedem. n.* 2067. *Oed. dan. t.* 366. *Berg. phyt. t.* 57. *Villars dauph.* 3. 659.

C. fol. pediculis oblongis inſidentibus. *Tourn. inſt.* 146.

Saxifraga aurea. *Raii hiſt.* 206. *ſyn.* 158. *Pet. brit. t.* 6. *f.* 10. *Bauh. hiſt.* 3. 707. *f.* 1. *Bell. eyſt. hyem. t.* 6. *f.* 5.

Sedum paluſtre luteum majus, &c. *Mor. hiſt.* 477. *ſ.* 12. *t.* 8. *f.* 8.

*Leaves alternate.*

2. Chryſoſplenium oppoſitifolium. *Oppoſite-leaved Golden Saxifrage.*

*Lin. ſpec.* 569. *Reich.* 2. 308. *Hudſ. angl.* 178. *With.* 465. *Curt. lond. t.* 27. *Lightf.* 220. *Hall. helv. n.* 1349. *Pollich pal. n.* 401. *Neck. gallob.* 190. *Leers. herb. n.* 313. *Oed. dan. t.* 365. *Sabb. hort. t.* 1. *t.* 51. *Villars dauph.* 3. 659.

C. fol. ampliſſimis auriculis. *Tourn. inſt.* 146.

C. f. Saxifraga aurea. *Tabern. hiſt.* 1224.—*ic.* 841.

Saxifraga aurea. *Dod. pempt.* 316. 2. *Lob. hiſt.* 336. 1. *ic.* 612. *Ger. emac.* 841. 2. *Park.* 425. 2. *Pet. brit. t.* 6. *f.* 9.

Sedum pal. lut. fol. ſubrotundis ſeſſilibus. *Mor. ſ.* 7.

*Leaves oppoſite.*

DESCRIPTIONS, &c.

[1. This is ſo much larger in all reſpects than the ſecond ſpecies, that it may eaſily be diſtinguiſhed.

[x] Jacquin. [y] Ibid. [z] Ibid. [a] Swartz.

guiſhed. *Root* has off-ſets, but no creeping ſuckers. *Leaves* all deeply notched: root-leaves two or three, kidney-ſhaped, bluntly notched, on long hairy petioles: ſtem-leaves two or three on petioles decreaſing in length as they approach the top; the upper ſmooth. *Stem* three-cornered with imperfect angles, hairy below, ſmooth upwards, near the top forked: the forks bare of leaves. *Branches* one or two very ſhort ones, juſt above the root-leaves, with alternate leaves ſimilar to them: *ſubdiviſions* of the upper not ſo regularly forked as in *C. oppoſitifolium*. *Flowers* ſolitary and in umbels; the firſt on a ſhort peduncle on one of the branches a little above the forks; the latter with a leaf at their baſe. *Stamens* eight; four from the baſe of the ſegments, the other four from the iſſures. *Seeds* roundiſh, ſhining, not readily ſhaking out, brownish *. According to Gærtner, the capſule is ſmall, faſtened to the calyx up to the middle, obcordate, compreſſed like a lens, opening into two parts down to the middle, the ſegments emarginate, ſpreading out horizontally. Seeds about fifty, faſtened by capillary threads to the bottom of the capſule, ovoid, marked with a ſilk-like ſcar on one ſide, ſmooth, lucid, ferruginous-red or cheſtnut-coloured.

Several modern botaniſts affirm, that the terminating flower, as well as the ſide ones, is generally four-cleft, and has eight ſtamens: others even inſiſt that it is always ſo; and accordingly have removed this genus into the claſs *Octandria*.

Moiſt ſhady places, and by the ſides of rivulets in Lapland, Sweden, Denmark, Germany, Switzerland, Carniola, Italy, Siberia, Japan; and with us in Britain with *C. oppoſitifolium*, but not ſo common: as near Bingley and about Eſholt, eight miles from Leeds, in Yorkſhire. Porland heath near Norwich, in Worceſterſhire, and Scotland.—A black boggy ſoil by rills in wet woods is the favourite ſituation of this plant.

2. Linneus almoſt doubts whether this be a diſtinct ſpecies.—*Stems* creeping at bottom, ſquare, very tender, erect, about four inches in height, beſet with a few ſtiffiſh hairs; branched and forked at top. *Leaves* connate, petioled, ſpreading, roundiſh, with a few white ſtiffiſh hairs on the upper ſurface, crenate, ſomewhat fleſhy, yellowiſh green, whitiſh underneath; the upper more deeply notched. *Flowers* yellow, in a ſeſſile, faſtigiate corymb: ſegments of the calyx nearly equal: what Linneus calls the angular receptacle is more properly a nectary: it is a ſcale with a crenate edge, ſurrounding the germ: the ſtamens proceed from beneath, not out of it: the anthers are double and roundiſh. *Seeds* of an orange colour *. *Stem* erect, round, with two oppoſite deep furrows, but not quadrangular; and two or three pairs of oppoſite leaves: dichotomous at the top, without any leaves at the diviſion: each branch is again dichotomous, with a leaf at each diviſion, and a ſingle flower on a ſhort peduncle; from theſe ariſe ſmall leafy umbels of ſeſſile flowers. *Leaves* all alike, circular, with the baſe truncate on each ſide, indiſtinctly and irregularly notched, with a few hairs on the upper ſurface, but none on the under: root-leaves ſeveral, on ſhort hairy petioles: upper leaves ſmooth.

According to late obſervations, the terminal flower of this ſpecies alſo has rarely more than four diviſions of the calyx, and eight ſtamens; ſome ſay never, but others affirm that they have ſeen five diviſions, and ten ſtamens. Dr. Withering has ſometimes obſerved only ſix or ſeven. Mr. Woodward affirms, that both ſpecies in Britain are truly octandrous: that in april 1785 he examined great numbers of both in their native places of growth, and did not find a ſingle primary flower decandrous; that the calyx has four diviſions, in which four of the ſtamens are placed, and the other four in the centre of each ſegment; ſo that the flower cannot be decandrous, unleſs the calyx has accidentally five diviſions.

* Woodw. MS. * Curtis.

This is found in like places with the other, in Denmark, Holland, Switzerland, Germany: with us it is much more common; as on Hampſtead heath; in the boggy part of Charlton wood; Polinglland heath, near Norwich; Selborne, Hants.

Theſe flower in april, or early in may, and ripen their ſeeds in may or june; they are perennial.]

PROPAGATION AND CULTURE.

If any perſon has curioſity to cultivate theſe plants in a garden, they muſt be planted in very moiſt ſhady places, otherwiſe they will not thrive. [They ſucceed beſt in pots filled with bog earth, ſet in a pan of water, and placed under the ſhade of a wall or hedge.

CHU-LAN. See *Chloranthus*.

CHYTRACULIA. See *Calyptranthes*.]

*Cibouls or Chibouls.* See *Allium*.

[CICCA.

*Lin. gen. Reich. n.* 1146. *Schreb.* 1417. *Juſſ.* 386.

Claſs, 21. 4. Monoecia Tetrandria.

GENERIC CHARACTER.

* *Male* flowers ſcattered.

CAL. *Perianth* four-leaved: *leaflets* roundiſh, concave.

COR. none.

STAM. *Filaments* four, ſetaceous. *Anthers* ſubglobular, the length of the calyx.

* *Female* flowers ſcattered on the ſame plant.

CAL. as in the males. (three-leaved. *Syſt.*)

COR. none.

PIST. *Germ* roundiſh. *Styles* four two-parted, ſubulate, the length of the germ. *Stigmas* acute, permanent.

PER. *Capſule* ſubglobular, tetracoccous, elaſtic.

SEEDS ſolitary.

OBS. *This genus bears an affinity to* Phyllanthus.

ESSENTIAL CHARACTER.

MALE. *Calyx* four-leaved. *Cor.* none.

FEM. Calyx three-leaved. *Cor.* none. *Styles* four. *Capſ.* tetracoccous.

SPECIES.

1. Cicca diſticha.
*Lin. ſyſt. edit.* 14. 848.—*ed.* 13. 708.—*ed.* 12. 621. *mant.* 124. *Reich.* 4. 125. *ſuppl.* 416.

C. racemoſa. *Lour. cochinch.* 556.
Averrhoa acida. *Lin. ſyſt. ed.* 13. 357. Terme *Gærtn.* 2. 487. *t.* 180.

DESCRIPTION, *&c.*

A ſhrub. *Leaves* alternate, petioled, diſtich, ovate, acuminate, gloſſy. *Racemes* ſimple: the floſcules being heaped and mixed at every point, and placed on pedicels, ſcarcely ſo big as thoſe of *Clutia*, to which this is allied. Native of the Eaſt-Indies *.

A tree, with long ſimple branches. *Leaves* alternate, diſtich: the lower rounded-ovate, ſmaller; the upper ovate-lanceolate, acuminate, entire, very ſmooth. *Flowers* proceeding from the loweſt part of the branches, after the falling of the leaves, and occupying their places; aggregate in ſeſſile heads, male and female on the ſame tree, but on different branches: *males* more aggregate, ſmall, like thoſe of *Phyllanthus*, white, four-cleft: *females* leſs, not ſo aggregate; calyx four-parted; germ ovate; ſtyles reflected; pericarp an ovate berry, not elaſtic like the capſule of *Phyllanthus*. It ſeems however to be a true ſpecies of *Phyllanthus*, except in the number of parts, and having a berry for the fruit: it remains a doubt, therefore, whether this genus of *Cicca* ſhould remain *.

Loureiro deſcribes his *Cicca racemoſa* as a middle-ſized tree with aſcending branches, the leaves ovate ſubacuminate quite entire, ſmooth alternate petioled diſtich, the flowers in compound ſhort ſubterminating racemes, the males and females on different branches; neither have any calyx, the corolla is bell-ſhaped, four-parted, the ſegments ovate, ſpreading, red, dotted with white; filaments ſhorter than the corolla, anthers two-celled; the fruit is a roundiſh berry, half an inch in diameter, pale, ſmooth, acid, eatable, containing four ovate ſeeds.

* Linn. mant. * Linn. ſuppl.

Loureiro obſerves, that what Linnæus calls the calyx is rather the corolla, on account of its colour and tenuity. It is frequent in the kingdom of Champava; and is cultivated, but rarely, in the metropolis of Cochinchina.

Gærtner deſcribes the fruit of his *Verme*, which is the Javaneſe name, as a ſmall fleſhy drupe; the ſtone or ſhell is ſtony, depreſſed a little, at top pyramidally four-ſided with a ſhort point, thence with a croſs-ſhaped furrow; having at bottom eight ſwellings in pairs, and perforated in the middle of the baſe with a four-cornered canal; it is four-celled and valveleſs. Seeds ſolitary, ovate, acuminate upwards, convex on one ſide, angular on the other, with a little umbilical pit in the middle of the angle.

It is doubtful whether the *Cicca* and the *Averrhoa acida* be the ſame ſpecies, the deſcriptions of the fruit given above being ſo different. It certainly is not an *Averrhoa*.]

CICELY. See *Chærophyllum*.

CICER. (*Of uncertain origin, unleſs it be from the Greek* κικυς, *ſtrength. The Cicerones had their name from this pulſe, as the Piſones had from the Piſum or Pea, and the Lentuli from the Lens or Lentil.*)

*Lin. gen. n.* 875. *Reitb. n.* 949. *Schreb.* 1189. *Juſſ.* 361. *Gærtn. t.* 151. *Tourn. t.* 210. Lens. *Tourn. t.* 210.

Claſſ. 17. 4. Diadelphia Decandria.

Nat. order of *Papilionaceæ*, or *Leguminoſæ*.

GENERIC CHARACTER.

CAL. *Perianth* five-parted, length of the corolla: *ſegments* four, incumbent on the banner: the two middle converging longitudinally: the lower under the keel.

COR. papilionaceous. *Banner* flat, roundiſh, larger, bent in on the ſides. *Wings* obtuſe, half the length of the banner. *Keel* ſhorter than the wings, ſharpiſh.

STAM. *Filaments* diadelphous (one and nine) riſing. *Anthers* ſimple.

PIST. *Germ* ovate. *Style* ſimple, riſing. *Stigma* obtuſe.

PER. *Legume* rhomboid, turgid, inflated.

SEEDS two, roundiſh, gibbous, with knots on the ſides, crooked and bent in at top.

ESSENTIAL CHARACTER.

*Cal.* five-parted, length of the corolla: the four upper ſegments incumbent on the banner. *Legume* rhombed, turgid, two-ſeeded.

SPECIES.

1. Cicer arietinum. *Chich-pea.*
*Lin. ſpec.* 1040. *Reich.* 3. 478. *hort. cliff.* 370. *upſ.* 224. *mat. med.* 173. *Gærtn. fruct.* 2. 327. *Hall. helv. n.* 399. *Villars dauph.* 3. 405. *Blackw. t.* 557. *Dod. pempt.* 525. 1. *Riv. t.* 19. *Bauh. hiſt.* 2. 292.
C. ſativum. *Bauh. pin.* 347. *Camer. epit.* 204. *Raii hiſt.* 917. *Ger.* 1047. *emac.* 1222. *Park.* 1076.
*Leaflets ſerrate.*

DESCRIPTION, *&c.*

[Annual. Stem from a foot to eighteen inches in height, erect, leafy, branched. Stipules large, unequally gaſhed, with ſome very ſharp teeth. Leaves hirſute, compoſed of eight (ſeven to nine) pairs of leaflets, with an odd one, ovate, and finely ſerrate. Peduncles one-flowered, axillary, recurved. Corolla purple or white. Calyx hirſute [a]. Legume ovate-rhomboid, villoſe. Seeds two, ſometimes perfectly globular, with a ſhort beak at the navel, ſometimes angular, and reſembling a ram's head, whitiſh or ruſeſcent [b].

Native of the South of Europe, the Levant, and Africa: where it is frequently eaten both raw and boiled.

Cultivated 1551, at Kew, by William Turner, M.D. [c]. Gerarde ſays, it is ſown in our London gardens, but not common: and is named in Engliſh common Cich or Ciches, red Cich, or Sheep's Ciche, Peaſe or Peaſon. Parkinſon adds the names of Cicers and Rammes Ciches.]

PROPAGATION AND CULTURE.

The ſeeds of this plant may be ſown in the ſpring, in the ſame manner as Peaſe, making drills with a hoe, about an inch and a half deep, in which the ſeeds ſhould be ſown at about two inches aſunder, then with a rake draw the earth into the drill to cover the ſeeds. The drills ſhould be made at three feet diſtance from each other, that there may be room for their branches to ſpread, when the plants are fully grown, as alſo to hoe the ground between them, to keep it clean from weeds, which is all the culture theſe plants require.

This plant flowers in June, and the ſeeds ripen in auguſt; but unleſs the ſeaſon proves warm and dry, the plants decay in this country before the ſeeds are ripe.

[CICER. See *Astragalus, Ervum, Galega, Ononis.*

CICERA. See *Lathyrus.*

Ciceri affinis. See *Astragalus.*

Cichorio affinis. See *Sieglingbeckia.*]

CICHORIUM. (*Originally, according to Pliny, an Egyptian name, and adopted by the Greeks. It is written ſometimes* κιχωριον, *whence Horace has*

——*Cichoreæ leveſque Malvæ.*

*ſometimes* κιχηριον *or* κιχηνιον. *It is ſuppoſed to have this name* παρα το κειχαν τον χωρον αυτο, *from its creeping through the fields.—Others derive it from* κιχημι, *to gape; on account of its being ſo readily ſown, or ſo common.*)

Engl. *Succory.* Fr. *Chicorée.*

*Lin. gen. n.* 921. *Reich. n.* 1000. *Schreb.* 1231. *Gærtn. t.* 157. *Juſſ.* 171. *Tournef. t.* 372. *Vaill. mem.* 1721. 9. 10.

Claſſ. 19. 1. Syngenecia Polygamia Æqualis.

Nat. order of *Compoſitæ Semiflosculoſæ. Cynarocephalæ* Juſſ.

GENERIC CHARACTER.

CAL. *Common* calycled cylindric: *ſcales* eight, narrow-lanceolate, equal, forming a cylinder: and five others incumbent and ſhorter.

COR. *Compound* flat, uniform: *corollules* hermaphrodite twenty, in a ring.—*Proper* monopetalous, ligulate, truncate, deeply five-toothed.

STAM. *Filaments* five, capillary, very ſhort. *Anther* cylindric-pentagon, tubulous.

PIST. *Germ* oblong. *Style* filiform, the length of the ſtamens. *Stigmas* two revolute.

PER. none. *Calyx* cylindric, converging at top.

SEEDS ſolitary, compreſſed, with ſharp angles. *Pappus* obſcurely hairy, ſlightly five-toothed (many-leaved, and as it were compoſed of a double row of leaves. *G.*)

REC. ſomewhat chaffy.

ESSENTIAL CHARACTER.

*Cal.* calycled. *Pappus* ſlightly five-toothed, obſcurely hairy. *Rec.* ſomewhat chaffy.

SPECIES.

1. Cichorium Intybus. *Garden and wild Succory.*
*Lin. ſpec.* 1142. *Reich.* 3. 665. *Jacq. n.* 711. *hort. cliff.* 389. 2. *mat. med.* 179. *Gærtn. fruct.* 2. 357. *Hudſ. angl.* 348. *With.* 862. *Curt. lond.* 4. *t.* 56. *Hall. helv. n.* 1. *Swed. carn. n.* 991. *Neck. gallob.* 334. *Pollich pal. n.* 758. *Allion. pedem. n.* 732. *Fl. dan. t.* 907. *Villars dauph.* 3. 59.
C. ſylveſtre ſ. officinarum. *Bauh. pin.* 125. *Blackw. t.* 183, 177.
C. ſylv. & ſativum. *Bauh. hiſt.* 2. 1007. *fig.* 1008. *Raii hiſt.* 255.
C. ſylveſtre. *Ger. emac.* 284. 1. *Park.* 776. 2. *Mor. ſ.* 7. *t.* 1. *f.* 2.
Intybus ſylveſtris. *Cam. epit.* 285. *Fuchſ.* 679. *Flowers from ſeſſile leaves ruminate.*
2. Cichorium Endivia. *Broad-leaved Succory,* or *Common Endive.*
*Lin. ſpec.* 1142. *Jyſt.* 772. *Reich.* 3. 665. *hort. cliff.* 389. 3. *upſ.* 247. *mat. med.* 180. *Lour. cochinch.* 478.
Intybus ſativa latifolia ſ. Endivia vulgaris. *Bauh. pin.* 125. 1. a 1. *ſat. anguſtifolia. n.* 2.

[a] Haller. [b] Gærtner. [c] Hort. kew.

Intybum ſativum. *Dod. pempt.* 634.—latifolium & anguſtifolium. *Bauh. hiſt.* 2. 1011.
Intybus ſativa. *Ger. emac.* 282. *Raii hiſt.* 254. 1, 2.
Endivia ſativa. *Park.* 774. *f.* 1.—& minor anguſtifolia. *f.* 2.
β. C. criſpum. *Mill. dict. n.* 4. *Curled Endive.*
Intybus criſpa. *Bauh. pin.* 125. *Raii hiſt.* 254.
Endivia criſpa. *Ger.* 221. 4.
*Flowers ſolitary peduncled, leaves entire crenate.*
3. Cichorium ſpinoſum. *Prickly Succory.*
*Lin. ſpec.* 1143. *Reich.* 3. 666. *hort. cliff.* 388. 1. *Bauh. pin.* 126. *Bauh. hiſt.* 2. 1011. *f.* 3. *Ger. emac.* 283. *f.* 5. *Raii hiſt.* 255.
C. ſpin. creticum. *Bauh. prodr.* 1. 62. *Park.* 776. *f.* 3.
Chondrillæ genus elegans, cæruleo fl. *Chif. hiſt.* 2. 145. 1.
*Stem dichotomous, ſpiny; flowers axillary, ſeſſile.*

DESCRIPTIONS, *&c.*

[1. *Root* perennial, yellow on the outſide, tapering, branched, the thickneſs of the finger, from a ſpan to a foot in length, milky. *Stem* from one to three feet in height, upright, rigid, crooked, angular, roughiſh to the touch, and generally very much branched. *Leaves* radical, numerous, runcinated, roughiſh: thoſe of the ſtem ſmoother, alternate, half-ſtem-claſping, lanceolate, toothed towards the baſe, fringed with briſtly hairs terminating in globules; the teeth and ends finiſhing in a ſharp ſtiff awn. *Flowers* generally in pairs, ſeſſile, in the boſom of the upper leaves. *Calyx*, outer ſcales five or ſix, bent back, edged with glandular hairs: inner narrow, equal, forming an angular clammy cylinder, ſet along the back with ſimilar hairs, woolly at the ends. *Florets* of a fine blue; frequently white, and ſometimes red: tube white, dilated and hairy at top; border ribbed on the under ſide and villoſe. Anthers deep blue. Germ ſubconic, crowned with very ſhort hairs. Stigmas blue. Seeds irregularly five-cornered [a], obovate, ſtarted a little, obſcurely ſtriated, ſmooth, ſtraw-coloured. Pappus many-leaved, the leaflets chaffy, acuminate, very ſhort, white. Receptacle flattiſh, ſometimes with minute depreſſed papillas, ſometimes with ſmall diſtant briſtles, and obſcure little pits between them [b]. The fine blue colour of the florets is convertible into a brilliant red by the acid of ants [c]. —The flowers open at eight, and cloſe at four [d]. Common on the borders of corn-fields, flowering from july to ſeptember, and increaſing itſelf much by ſeed.

This plant has generally been regarded in the light of a noxious weed; it has however for ſeveral years paſt been cultivated in France as food for cattle. Monſ. Cretté is ſaid to have been the firſt who introduced it there, at leaſt to any extent, for field culture; and he publiſhed a memoir on the ſubject. For its introduction into England for the ſame purpoſe we are indebted to Arthur Young, Eſq. who firſt brought the ſeed from France in the year 1788, and has ſince cultivated it to a conſiderable extent with great ſucceſs. In Lombardy it is ſown mixed with other herbs of paſture, and cut three or four feet high. It is reputed there to increaſe both the milk and fleſh of cattle, and to be very nutritious when made into hay. Horſes eat it greedily; and it is an important object for ſummer-ſoiling both them and cattle. It is alſo freely eaten by ſheep.

Succory or Chicory, as the agriculturiſts affect to call it from the French name Chicorée, deſies drought, being of early growth, and the firſt large and ſpreading leaves covering the ground ſo as to retain the moiſture. The ſtalks are ſo thick and ſtiff as to ſupport themſelves againſt winds and the heavieſt rains. The moſt ſevere cold does not injure it. The quickneſs of growth renders it very valuable, becauſe it furniſhes abundance of ſalutary fodder at a ſeaſon when green food is ſcarce. It has been found to grow ſeven inches in three weeks, whilſt Saintfoin and Burnet grew only four inches. Two cuttings may be made of it the firſt year, and three or four according to the ſeaſon every year after, in april, june, auguſt and october, or in may, july and october, never letting it ſtand till it becomes hard and ſticky: or it may be cut continually, by beginning again when the whole piece is gone over, and thus yield a conſtant ſupply of freſh food during ſeven or eight months.

The produce is ſaid to be ſuperior upon the whole to that of Lucerne in the proportion of three to one. A piece of ground ſown with Succory was found to yield by the acre the year of ſowing at two cuttings, july the 24th, and october the 17th

19 tons, 4 cwt.

Second year, at three cuttings, may 21ſt, july 24th. and dec. 3d. 38 9

And the whole average produce of four years was near thirty tons.

In our moiſt climate this ſucculent plant ſeldom dries well for hay, unleſs the ſeaſon be very favourable.

The quantity of ſeed produced on an acre has been, the firſt year, an hundred and an half; the ſecond, two hundred weight, and the third, from three hundred and an half to four hundred and an half [f].

Upon the whole, allowing for the partiality with which novelties are commonly viewed, as far as our preſent experience has extended, Succory ſeems to be a valuable object of culture, as freſh feed for horſes, kine and ſheep. The leaves blanched are eaten early in the ſpring in ſalads; and the roots, gathered before the ſtem ſhoots up, are eatable, and when dried may be made into bread [g]. Dried and pulverized they are uſed in Germany, to mix with coffee, one part of Succory roots to two parts of coffee, which it is ſaid to increaſe in ſtrength, taſte and ſalubrity [h].

Succory is a uſeful detergent, aperient and attenuating medicine; acting without much irritation, tending rather to cool than heat the body, and at the ſame time corroborating the tone of the inteſtines. The juice taken in large quantities, ſo as to keep up a diarrhœa, and continued for ſome weeks, has been found to produce excellent effects in ſcorbotic and other chronical diſorders [i].

2. Stem herbaceous, annual, two feet high, upright, round, thick, branched. Root-leaves many, large, ſubcuneiform, ſinuate-toothed, ſmooth on both ſides; the uppermoſt lanceolate, ſmall. Flowers pale blue, ſolitary, peduncled, [k]

This differs from the firſt ſort in its duration, being at moſt biennial; and if the ſeeds be ſown in the ſpring, the plants will flower and produce ſeeds the ſame year, and periſh in the autumn: the leaves alſo are broader, rounder at the top, and not lacinated on the ſides, the branches are more horizontal, and the ſtalks never riſe ſo high.

[Native of China and Japan. Cultivated 1562 [l].

Jacquin (Obſ. 4. t. 80.) has deſcribed and figured a *Cichorium*, under the name of *C. humile*, which is allied to this ſpecies [m].]

3. The third ſort grows naturally on the ſea-coaſts in Sicily, and the iſlands of the Archipelago. This ſends out from the root many long leaves, which are indented on their edges, ſpreading flat on the ground; from between theſe ariſe the ſtalks, which have very few leaves, and thoſe ſmall and entire: the ſtalks are divided in forks upward, from between theſe come out the flowers, which are of a pale blue, and are ſucceeded by ſeeds ſhaped like thoſe of the common ſort; the ends of the ſmaller branches are terminated by ſtar-like ſpines, which are very ſharp. The plant is biennial with us in England, and in cold winters is frequently killed. It flowers

[a] Curtis & Withering. [b] Gærtner.
[c] Haller & Curt. from Tragus. [d] Linn.
[f] Young's Annals, vol. 6. p. 48. 11. p. 145. 12. p. 186. 13. p. 252. 16. p. 377. 17. p. 202. 18. p. 316. 23. p. 383.
[g] Withering. [h] Young's Annals, vol. 13. p. 544.
[i] Lewis. [k] Loureiro. [l] Hort. kew. from Turner.
[m] Linn.

and feeds about the ſame time with the firſt ſort, and may be treated in the ſame way as the Endive.

[It was cultivated here in 1633[a].

PROPAGATION AND CULTURE.

1. The common Succory, or rather a highly improved variety of it, for in its ordinary wild ſtate it is dry, hard and juiceleſs, is now introduced into field culture to great advantage. The proper quantity of ſeed to be ſown on an acre, either alone or with ſpring corn, is twelve pounds; but if it be ſown with various other ſeeds, the quantity of Succory or Chicory ſeed muſt be leſs, in proportion to the quantity of ſuch ſeeds. When ſown with Barley or Oats, with either of which it ſucceeds very well, it muſt be ſown of courſe at the uſual time of ſowing theſe grains; but alone it may ſafely be put into the ground at any time from march to ſeptember. It ſhould not be mixed with Clover, unleſs the latter is expected to fail. Chicory does not ſtool, tiller, or thicken on the ground. It flouriſhes beſt where it has moſt room and air; it ſhould ſeem therefore that the drill huſbandry would be moſt ſuitable to it. Thus cultivated, after the firſt year, it may be mown four times a year.

If ſown for ſeed only, it ſhould be drilled alone; or at leaſt drilled acroſs corn before it is up, but it is better ſown by itſelf.]

2. The plain broad-leaved Endive is not much cultivated in the Engliſh gardens, for the curled Endive being more tender and not ſo bitter, is generally preferred to it: but it is ſtill cultivated in Italy.

The curled Endive is now much cultivated in the Engliſh gardens, being one of the principal ingredients in autumn and winter ſalads.

The firſt ſeaſon for ſowing the ſeeds is in may, for thoſe which are ſown earlier, generally run up to ſeed before they have arrived to a proper ſize for blanching; and it frequently happens that the ſeeds ſown in may in the rich ground near London will run to ſeed the ſame autumn; but in ſituations which are colder, they are not ſo apt to run up; therefore there ſhould be ſome ſeeds ſown about the middle or end of the month. The next ſowing ſhould be about the middle of june; and the laſt in the middle of july. From theſe three crops there will be a ſupply for the table during the whole ſeaſon; for there will be plants of each ſowing, very different in their growth, ſo that there will be three different crops from the ſame beds.

When the plants come up they muſt be kept clean from weeds, and in dry weather duly watered, to keep them growing till they are fit to tranſplant, when there ſhould be an open ſpot of rich ground prepared to receive the plants, in ſize proportionable to the quantity intended. When the ground is well dug and levelled, if it ſhould be very dry, it *muſt* be well watered to prepare it to receive the plants; then the plants ſhould be drawn up from the ſeed-bed carefully, ſo as not to break their roots, drawing out all the largeſt plants, leaving the ſmall ones to get more ſtrength; which, when they have room to grow, by taking away the large ones, they will ſoon do. As the plants are drawn up, they ſhould be placed with their roots even, all the ſame way, and every handful as they are drawn, ſhould have the tops of their leaves ſhortened, to make them of equal length: this will render the planting of them much eaſier, than when the plants are promiſcuouſly mixed, heads and tails: then the ground ſhould be marked out in rows at one foot aſunder, and the plants ſet ten inches diſtant in the rows, cloſing the earth well to their roots, and let them be well watered; and repeat this every other evening, till the plants have taken good root, after which they muſt be kept clean from weeds.

When the plants of the ſeed-bed have been thus thinned, they ſhould be well cleaned from weeds and watered, which will encourage the growth of the remaining plants, ſo that in ten days or a fortnight after, there may be another thinning made of the plants, which ſhould be tranſplanted in the ſame manner. And at about the ſame diſtance of time, the third and laſt drawing of plants may be tranſplanted.

Thoſe plants which were the firſt tranſplanted, will be fit to blanch by the latter end of july at fartheſt; and if they are properly managed, in three weeks or a month, they will be ſufficiently blanched for uſe, which will be as ſoon as theſe ſalads are commonly required; for during the continuance of good Cos Lettuce, few perſons care for Endive in their ſalads; nor, indeed, is it ſo proper for warm weather. If any of the plants ſhould put out flower-ſtems, they ſhould be immediately pulled up and carried away, being good for nothing. As the quantity of roots neceſſary for the ſupply of a middling family is not very great, there ſhould not be too many plants tied up to blanch at the ſame time, therefore the largeſt ſhould be firſt tied, and in a week after thoſe of the next ſize; ſo that there may be three different times of blanching the plants, on the ſame ſpot of ground. But as in ſome large families there is a great conſumption of this herb for ſoups, the quantity of plants ſhould be proportionably greater, at each time of planting and blanching.

*Blanching Endive.*

In order to this you ſhould provide a parcel of ſmall Oſier twigs (or baſs mat) to tie up ſome of the largeſt heads; which ſhould be done in a dry afternoon, when there is neither dew nor rain to moiſten the leaves in the middle of the plants, which would occaſion their rotting ſoon after their being tied up. The manner of doing it is as follows: you muſt firſt gather up all the inner leaves of the plant in a regular order, into one hand, and then take up thoſe on the outſide that are ſound, pulling off and throwing away, all the rotten and decayed leaves which lie next the ground; obſerving to place the outſide leaves all round the middle ones, as near as poſſible to the natural order of their growth, ſo as not to croſs each other: then having got the whole plant cloſe up in your hand, tie it up with the twig, baſs, &c. at about two inches below the top, very cloſe; and about a week after go over the plants again, and give them another tie about the middle of the plant, to prevent the heart leaves from burſting out on one ſide; which they are ſubject to do, as the plants grow, if not prevented this way.

In doing this you need only tie up the largeſt plants firſt, and ſo go over the piece once a week, as the plants increaſe in their growth; by which means you will continue the crop longer, than if they were all tied up at one time: for when they are quite blanched, which will be in three weeks or a month after tying, they will not hold ſound and good above ten days or a fortnight, eſpecially if the ſeaſon proves wet: therefore it is that I would adviſe to ſow at three or four different ſeaſons, that you may have a ſupply as long as the weather will permit. But in order to this, you muſt tranſplant all the plants of the laſt ſowing under warm walls, pales, or hedges, to ſcreen the plants from froſt; and if the winter ſhould prove very ſharp, you ſhould cover them with ſome Peaſe haulm, or ſuch other light covering, which ſhould be conſtantly taken off in mild weather: theſe borders ſhould alſo be as dry as poſſible, for theſe plants are very ſubject to rot, if planted in a moiſt ſoil in winter.

Although I before directed the tying up of the plants to blanch them, yet this is only to be underſtood for the two firſt ſowings; for after october, when the nights begin to be froſty, thoſe plants which are ſo far above ground will be liable to be much prejudiced thereby, eſpecially if they are not covered in froſty weather; therefore the beſt method is, to take up your plants of the latter ſowings in a very dry day, and with a large flat-pointed dibble, plant them into the ſides of trenches of earth, which ſhould be laid very upright, planting them ſideways, on the ſouth ſide of the trenches, towards the ſun, with the tops

[a] Hort. kew.

tops of the plants only out of the ground; ſo that the haſty rains may run off, and the plants be kept dry, and ſecured from froſts.

The plants thus planted, will be blanched fit for uſe in about a month or five weeks time, after which they will not keep good more than three weeks, before they will decay; you ſhould therefore continue planting ſome freſh ones into trenches every fortnight or three weeks, that you may have a ſupply for the table; and thoſe which were laſt tranſplanted out of the ſeed beds, ſhould be preſerved till february, before they are planted to blanch; ſo that from this you may be ſupplied until the beginning of april, or later: for at this laſt planting into the trenches, it will keep longer than in winter, the days growing longer; and the ſun, advancing with more ſtrength, dries up the moiſture much ſooner than in winter, which will prevent the rotting of theſe plants; but if the weather ſhould prove froſty, theſe latter plantations of Endive ſhould be covered with mats and ſtraw to preſerve them, otherwiſe the froſt will deſtroy them, but the coverings muſt always be taken off when the weather is favourable.

When your Endive is blanched enough for uſe, you muſt dig it up with a ſpade; and after having cleared it from all the outſide green and decayed leaves, you ſhould waſh it well in two or three different waters to clear it the better from ſlugs, and other vermin, which commonly ſhelter themſelves amongſt the leaves.

But in order to have a ſupply of good ſeeds for the next ſeaſon, you muſt look over thoſe borders where the laſt crop was tranſplanted, before you put them into the trenches to blanch; and make choice of ſome of the largeſt, ſoundeſt, and moſt curled plants, in number according to the quantity of ſeeds required: for a ſmall family, a dozen of good plants will produce ſeeds enough; and for a large, two dozen or thirty plants.

Theſe ſhould be taken up and tranſplanted under a hedge or pale, at about eighteen inches diſtance, in one row about ten inches from the hedge, *&c.* This work ſhould be done in the beginning of march, if the ſeaſon is mild, otherwiſe it may be deferred a fortnight longer. When the flower-ſtems begin to advance, they ſhould be ſupported with a packthread, which ſhould be faſtened to nails driven into the pale, or to the ſtakes of the hedge, and run along before the ſtems, to draw them upright cloſe to the hedge or pale, otherwiſe they will be liable to break with the ſtrong winds. Obſerve alſo to keep them clear from weeds, and about the beginning of july your ſeeds will begin to ripen; as ſoon as you find the ſeeds are quite ripe, you muſt cut off the ſtalks, and expoſe them to the ſun upon a coarſe cloth to dry; and then beat out the ſeeds, which muſt be dried, and put up in bags of paper, and preſerved for uſe in ſome dry place. But I would here caution you, not to wait for all the ſeeds ripening upon the ſame plant; for if ſo, all the firſt ripe and beſt of the ſeeds will ſcatter and be loſt before the others are near ripe; ſo great a difference is there in the time when the ſeeds of the ſame plant are ripe.

[CICHORIUM. See *Crepis*, *Lapſana*, and *Pieris*.

CICLA. See *Beta*.]

CICUTA. (*Signifies the internode or ſpace between two joints of a reed; the hollow ſtem of any plant, which the ſhepherds uſed for making their rural pipes; ſuch ſtems in our old and rural language we call Keckſies.*

" Eſt mihi diſparibus ſeptem conjuncta *Cicuta*
" Fiſtula ———" *Virg.*)

*Lin. gen. n.* 354. *Reich. n.* 384. *Schreb.* 486. *Gærtn. t.* 22. *Juſſ.* 223.

Claſſ. 5. 2. Pentandria Digynia.

Nat. order of *Umbellatæ*, or *Umbelliferæ*.

GENERIC CHARACTER.

CAL. *Umbel univerſal* roundiſh: rays very many equal. *Partial* roundiſh, with very many, equal, ſetaceous rays.—*Involucre univerſal* none: *partial* many-leaved: *leaflets* briſtly, ſhort. *Perianth proper* ſcarcely viſible.

COR. *univerſal* uniform: *floſcules* all fertile.—*Proper* of five ovate, inflected, nearly equal petals.

STAM. *Filaments* five, capillary, longer than the corolla. *Authers* ſimple.

PIST. *Germ* inferior. *Styles* two, filiform, longer than the corolla, permanent. *Stigmas* headed.

PER. none. *Fruit* ſubovate, furrowed, bipartile.

SEEDS two, ſubovate, convex and ſtriated on one ſide; flat on the other.

ESSENTIAL CHARACTER.

*Fruit* ſubovate, furrowed.

SPECIES.

1. Cicuta viroſa. *Long-leaved Water Hemlock.*
*Lin. ſpec.* 366. *Reich.* 702. *mant.* 355. *hort. cliff.* 100. *fl. ſuec. n.* 253. *lapp. n.* 103. *mat. med.* 82. *Hudſ. angl.* 122. *With.* 299. *Lightf.* 164. *Pollich pal. n.* 294. *Krock. ſilef. n.* 442. *Oed. dan. t.* 208. *Gunn. norv. n.* 42. *t.* 2. *Villars dauph.* 2. 590. *Blackw. t.* 574. *Plenck, ic. t.* 213.
C. aquatica. *Wepfer monogr. Philoſ. tranſ.* 44. 237. *t.* 4, 5. *abr.* X. 769. *f.* 135, 136.
Cicutaria. *Riv. pent. t.* 76.
Sium. *Hall. helv. n.* 781. *Mor. hiſt.* 3. 283. *ſ.* 9. *t.* 5. *f.* 4. *umb. t.* 5. *Bauh. pin.* 154. *n.* 3. *Dod.* 589. 3. *Lob. obſ.* 105. 2. *ic.* 1. 208. 2. *Ger. emac.* 256. 4. *Park.* 1241. 3. *Pet. hrit. t.* 28. *f.* 1. *Bauh. hiſt.* 3. 175. *f.* 2. *Raii hiſt.* 450. *ſyn.* 212. *n.* 7.
*Umbels oppoſite-leaved, petioles margined obtuſe.*

2. Cicuta bulbifera.
*Lin. ſpec.* 367. *Reich.* 702.
Ammi. *Gron. virg.* 31, 42.
Umbellifera aquatica, &c. *Raii ſuppl.* 260.
*Branches bulbiferous.*

3. Cicuta maculata.
*Lin. ſpec.* 367. *ſyſt.* 286. *Gron. virg.* 44. *Gærtn. fruct.* 1. 100. *Riv. pent. t.* 75. *Blackw. herb. t.* 451. *& 573. a. b. Hall. helv. n.* 766.
Ægopodium. *Gron. virg.* 32.
Angelica. *Pluk. alm. t.* 76. *f.* 1. *Mor. hiſt.* 3. 281. *t.* 3. *f.* 9.
Myrrha. *Mitch. gen.* 18. *Act. nat. cur.* 8. *app.* 217.
*Serratures of the leaves mucronate, petioles membranaceous two-lobed at the end.*

DESCRIPTIONS, *&c.*

1. [*Stem* round, hollow. *Leaves* pinnate; leaflets lanceolate ternate, the ſerratures white at the tip. *Umbel* ſpreading, red at the baſe: involucels many-leaved, ſetaceous, ſhort. *Flowers* white, hermaphrodite: ſtyles erect, white, in the fruit divaricated: ſtigmas ſimple. *Fruit* compreſſed, gloſſy, truncate, opening tranſverſely [a].

*Stem* two, three, and even four feet high, ſtriated, ſmooth, reddiſh towards the bottom, dichotomous. *Leaves* ſheathing, a foot and half long, and near a foot broad; the lower on long hollow petioles, the upper almoſt ſeſſile; bipinnate: ſome of the pinnas ſimple, others bifid or trifid: the ſerratures ſometimes brown; the end leaf cut into three to the bottom; all ſmooth. Univerſal umbel wide, of fourteen rays or more: partial almoſt ſemiorbicular, of about forty-eight rays. Univerſal involucre uſually none, though ſometimes there is a leaflet or two: partial has about ten leaflets, ſome longer, ſome ſhorter than the umbellule. Calyx tolerably diſtinct. Petals heart-ſhaped, bifid, nearly equal, yellowiſh pale green. Anthers white or reddiſh purple. Styles at firſt ſhort and very cloſe, after flowering much longer; ſtigmas white, obtuſe [b].

This plant generally grows near the ſides of large ſtagnant waters, or in ſhallow ſlow rivers. Towards the end of autumn, the root for the ſucceeding ſummer is formed out of the lower part of the ſtalk: this is divided tranſverſely into many large unequal cells; ſo that it becomes ſpecifically lighter than water, and in winter, when the rivers or pools ſwell,

[a] Linn. mant. [b] Withering, Pollich, Krocker.

is buoyed up. The old root then rots, floats all the winter, and in rivers is frequently carried to great diſtances. In the ſpring the old root is waſhed away, and the new one, on coming near the ſoil, ſends out many ſlender fibres, by which it is again fixed, grows, and flowers[1].

It is an inhabitant of the northern part of Europe, from Lapland to Germany and Switzerland. In Britain it is not very common; but it is found at Iſleworth, in the Colne near Colnbrook and Uxbridge, on Houſlow-heath, in the iſle of Ely, Lovingland in Suffolk, near Norwich and Yarmouth, Harton in Shropſhire, Brereton-mere in Cheſhire, near Northwich, in Nottingham-park, in the Trent near Abbot's Bromley, near Stafford, and in Scotland, and Wales: flowering in july and auguſt.

This plant is one of the rankeſt of our vegetable poiſons. Numerous inſtances are recorded of its fatality to the human ſpecies by Wepfer, Haller, &c. and in the Philoſophical Tranſactions, by Dr. Watſon[2].

Linnæus (in flor. ſuec.) relates its fatal effects on kine: and Dr. Withering obſerves, that early in the ſpring, cows often eat of it, and are killed by it; but that, as the ſummer advances, and its ſcent becomes ſtronger, they carefully avoid it: that goats however devour it greedily with impunity, and that horſes and ſheep eat it with ſafety.

Strong emetics are the moſt approved remedy to this poiſon.

2. The leaves are divided into very minute capillary ſegments. The umbels terminate the ſtem and branches, and at the origin of the rays the ſtem and branches which ſupport them are ſurrounded with like capillaceous leaflets. The flowers are white, with the ſmell of Cumin flowers[3].

Native of Virginia and Canada, in watery places. Cultivated by Mr. Miller, in 1768.

3. Stem thick, ſpotted with purple, three feet high and more. Leaves black, ſhining, triply pinnate, the laſt pinnules ſomewhat bluntly toothed. Umbels many. Flowers white[4]. Fruit middle-ſized, ovate-globular, thick, gibbous, diſtantly ribbed. Seeds ovate, narrower upwards, very gibbous, ending in a ſhort conical tubercle bearing the ſtyle, and the waved rudiment of the calyx: ribs five, three dorſal and two lateral, white, ſubſtexuoſe, much raiſed, and compreſſed ſo as to be almoſt membranaceous; interſtices ſmooth, bay-ruſeſcent; ventral parts flat[5].

Native of Virginia, Switzerland, &c. in watery places. Cultivated by Mr. Miller in 1759.]

PROPAGATION AND CULTURE.

The firſt ſort will not grow well, unleſs there be a conſiderable depth of water for it to root in.

The ſecond and third ſorts may be propagated by ſeeds, which ſhould be ſown in autumn on a ſhady border: the plants will come up in the ſpring, and require no other care but to keep them clean.

CICUTA. See *Æthuſa*, *Chærophyllum*, and *Conium*.

CICUTARIA. See *Æthuſa*, *Chærophyllum*, *Cicuta*, *Conium*, *Lagoſtiſcum*, and *Phellandrium*.

[CIMICIFUGA. (*Quod cimices fugat*; *from its quality of driving away bugs.*)

*Lin. gen. Reich. n.* 740. *Schreb.* 933. *Juſſ.* 282. *t.* 505. *Gærtn. t.* 130. *Juſſ.* 234.

Claſs. 13. 4. Polyandria Tetragynia.

Natural order of *Multiſiliquæ*. *Papaveraceæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved: *leaflets* roundiſh, concave, caducous.

COR. *Nectaries* four, petal-ſhaped, urceolate, cartilaginous.

STAM. *Filaments* twenty, filiform. *Anthers* twin.

PIST. *Germs* four to ſeven. *Styles* recurved. *Stigmas* longitudinal on the ſtyle.

PER. *Capſules* oblong, opening with a lateral ſuture.

SEEDS very many, covered with ſpreading ſcales.

Obs. *It varies extremely in the number of parts in the calyx, corolla and piſtils; nor is either the ſex or proportion conſtant.*

ESSENTIAL CHARACTER.

*Cal.* four or five-leaved. *Nect.* four, urceolate. *Capſules* four to ſeven.

SPECIES.

1. Cimicifuga foetida.
*Lin. ſyſt.* 505. *Reich.* 2. 618. *Gærtn. fruct.* 2. 275.
Actæa cimicifuga. *Lin. ſpec.* 722. *amæn.* 7. *t.* 6. *f.* 2. *Gmel. ſib.* 4. 181. *t.* 70.
Thaliſtroides foetidiſſimum, criſtophorianæ facie. *Amm. ruth.* 102.

DESCRIPTION, &c.

Linnæus remarks, that it bears a great reſemblance to *Actæa racemoſa*. Root perennial, thick knotty ſhort, with many thickiſh fibres creeping tranſverſely. Stem ſometimes two yards in height, red at the baſe, thence pale green, ſlightly hirſute, ſcarcely ſtriated, ſoon dividing into two, one branch naked for the ſpace of three inches, then ſwelling into a knot, and ſubdividing into three hirſute branchlets, each ſuſtaining a pinnate glutinoſe leaf, the pinnæ ſerrate, hairy on the rib, pale green, veined: the other branch near the baſe bears a leaf ſimilar to the other, with more following which are gradually ſmaller, till the uppermoſt becomes entire. Flowers in long terminating racemes, alternate, globular, on very ſhort pedicels[1]. Capſules four, ſometimes fewer, ſometimes twice as many, netted, beaked with the ſtyle which is very ſhort and curved back, one-celled, opening on the interior or ventral ſuture. Seeds ſeveral oblong, covered all round with membranaceous linear-oblong flexile pale ſcales, and faſtened along the whole of the opening ſuture[2].

The flowering ſpike hangs down at firſt, but becomes erect as the flowers open. The whole plant has a ſtrong virroſe ſmell, occaſioning the head-ach.

Native of the farther Siberia, from the river Jeniſea: flowering the middle of july, and ripening its ſeed the middle of auguſt[3].

It was introduced here in 1777, by Meſſrs. Gordon and Græfer[4].]

PROPAGATION AND CULTURE.

See *Actæa*.

CINARA. See *Cynara*.

[CINAROIDES. See *Protea*.

CINCHONA. (*So named from the Countess del Cinchon, lady of a Spaniſh Viceroy, whoſe cure is ſaid firſt to have brought the Peruvian Bark into reputation.*)

*Lin. gen. n.* 228. *Reich. n.* 243. *Schreb.* 301. *Gærtn. t.* 33. *Juſſ.* 201. Quinquina. *Condam. act. gall.* 1738.

Claſs. 5. 1. Pentandria Monogynia.

Nat. order of *Contortæ*. *Rubiaceæ* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, ſuperior, ſhort, five-toothed, permanent: teeth ſharp.

COR. Monopetalous, funnel-ſhaped, five-cleft: *tube* long, obſcurely angular: *ſegments* lanceolate or linear, equalling the tube.

STAM. *Filaments* five, in the middle of the tube. *Anthers* linear, erect.

PIST. *Germ* inferior, turbinate, obſcurely angular. *Style* the length of the ſtamens. *Stigma* thick, bifid or entire.

PER. *Capſule* crowned with the calyx, bipartile, opening into two parts inwardly; the partition parallel.

SEEDS many, oblong, compreſſed, ſurrounded by a membranaceous wing.

ESSENTIAL CHARACTER.

*Capſ.* inferior, two-celled, bipartile, the valves parallel to the partitions opening inwardly.

[1] Watſon in philoſ. tranſ. [2] Withering. [3] Gmelin. [4] Gærtner. [5] Gmelin.
[1] Gronovius and Linn. ſuppl. [2] Haller. [3] Hort. kew.

SPECIES.

* *Flowers tomentose, ſtamens included.*

1. Cinchona officinalis. *Common Jeſuit's-bark, or officinal Cinchona.*
*Lin. ſpec.* 244. *ſyſt. ed.* 10. 929. *Reich.* 1. 476. *mat. med.* 61. *Vahl in act. havn.* 1. 1. *p.* 17. *t.* 1. *Gærtn. fruct.* 1. 169. *Swartz obſ.* 72. *Commerſ. norice.* 1744. *p.* 217. *t.* 1. *f.* 3. *Plenck, ic. t.* 131. *Woodv. med. bot.* 546. *t.* 200.
Quinquina. *Condamine in act. par.* 1738. fig.
Arbor febrifuga peruviana. *Raii hiſt.* 1796.
*Leaves ovate-lanceolate ſmooth, capſules oblong.*

2. Cinchona pubeſcens. *Pubeſcent Cinchona.*
*Vahl in act. havn.* 1. 1. *p.* 19. *t.* 2.
*Leaves ovate elongated at the baſe pubeſcent underneath, capſules cylindrical.*

3. Cinchona macrocarpa. *Long-fruited Cinchona.*
*Vahl in act. havn.* 1. 1. *p.* 20. *t.* 3.
C. officinalis. *Lin. ſyſt. ed.* 12. 164. *ed.* 14. 213. *ſuppl.* 144.
*Leaves oblong pubeſcent underneath ribbed.*

** *Corollas ſmooth, ſtamens ſtanding out.*

4. Cinchona caribæa. *Caribean Cinchona.*
*Lin. ſpec.* 245. *ſyſt.* 214. *Reich.* 477. *Jacqu. amer.* 61. *t.* 169. *f.* 95. *pict.* 35. *t.* 63. *obſ.* 2. 27. *t.* 47. *Vahl in act. havn.* 1. 1. *p.* 21. *Swartz obſ.* 72. *Gærtn. fruct.* 1. 169. *Pluk. phyt.* 1. 103. *f.* 3. *Plenck, ic. t.* 132.
C. jamaicenſis ſ. caribbeana. *Wright in philoſ. tranſ. vol.* 67. *p.* 504–506. *t.* 10.
*Peduncles axillary one-flowered.*

5. Cinchona corymbifera. *Corymbiferous Cinchona.*
*Lin. ſyſt.* 214. *ſuppl.* 144. *Forſter in nov. act. upſ.* 3. 175. *flor. auſtral. n.* 88. *Vahl in act. havn.* 1. 1. *p.* 22.
*Leaves oblong-lanceolate, corymbs axillary.*

6. Cinchona lineata.
*Vahl in act. havn.* 1. *p.* 22. *t.* 4.
*Panicle terminating, leaves ovate acuminate ſmooth, capſules five-cornered.*

7. Cinchona floribunda.
*Swartz prodr.* 42. *Vahl in act. havn.* 1. 23. *Philoſ. tranſ. vol.* 74. *p.* 452–456, *t.* 19.
C. montana. *Magaz. hiſt.* 6. 96. *t.* 3.
Kinkina. *Piſon. act. nat. cur.* 1787. *Rozier journ. de phyſ.* 1781. *p.* 169–179. & 1789. *p.* 129–132. *t.* 1.
*Panicle terminating, capſules turbinate ſmooth, leaves elliptic acuminate.*

8. Cinchona brachycarpa.
*Swartz prodr.* 42. *Vahl in act. havn.* 1. *p.* 24.
*Panicle terminating, capſules obovate ribbed, leaves elliptic obtuſe.*

9. Cinchona anguſtifolia.
*Swartz prodr.* 42. *act. holm.* 1787. *p.* 117–123. *t.* 3. *Vahl in act. havn.* 1. *p.* 25.
*Panicle terminating, capſules oblong five-cornered, leaves linear-lanceolate pubeſcent.*

DESCRIPTIONS, &c.

The Cinchonas are trees. The branches are round except at the top, where they are obſcurely four-cornered: the flowering-branches are alternately compreſſed. The leaves are oppoſite, undivided and quite entire. Stipules are interpoſed between the leaves, and preſſed cloſe to the branches. The inflorescence in moſt of the ſpecies is a brachiate panicle, with trifid pedunckes.

Swartz propoſes to divide the ſpecies into ſuch as have a ſhort, or an elongated tube to the corolla.

1. Officinal Cinchona is a tall tree, with a trunk rather bigger than a man's thigh. The branches are covered with a purpliſh brown bark, frequently rugged with obliquely tranſverſe chinks, and ſcarred by the fallen leaves. Theſe are ovate or ovate-lanceolate, ſharp, even, ſmooth on both ſides, veinleſs above, obliquely nerved, the lower nerves oppoſite; beneath they are a little paler and veined: they are about two inches long, approximating at the ends of the branches, but remote on the flowering-branches; they ſpread very much. The petiolus are half an inch in length, channelled above, convex beneath, towards the baſe wrinkled and rugged. Stipules in pairs on each ſide, minute, ſharp. Panicle terminating, ſpreading, trichotomous. Pedunckes and pedicels ſlightly tomentoſe; pedicels one-flowered. There is a minute bracte at the baſe and in the middle of the pedicel. Calyx a ſuperior rim, with very ſhort teeth. Corolla tomentoſe on the outſide, the ſegments acute, woolly within, ſhorter than the tube. Filaments alſo ſhorter than the tube: with anthers the length of it. Germ tomentoſe: ſtigma thickened at the top and ſlightly biſid. Capſules oblong, ſmooth, half an inch in length, marked with obſcure raiſed lines[*].

It is a native of Peru, growing moſt abundantly on a long chain of mountains extending to the north and ſouth of Loxa; between two and five degrees of S. latitude. Here the trunks of theſe trees frequently exceed in ſize the body of a man. The ſoil in which they thrive beſt is a red clayey or rocky ground, eſpecially on the banks of ſmall rivers or torrents. The moſt proper ſeaſon for cutting the bark is from ſeptember to november, which is the only time of ſome intermiſſion from rain. On a ſpot where the trees abound, having made a road to it from the neareſt plantation in the low country, they build huts for the workmen, and a large hut for the bark. Each Indian is provided with a large knife, and a bag that will hold about fifty pounds of green bark: he cuts down the bark as high as he can reach from the ground; he then faſtens a ſtick about half a yard long, with tough withs to the tree like the ſtep of a ladder, and having ſliced off the bark as high as he can reach with this, he fixes a new ſtep, and thus mounts to the top, another Indian below gathering up what he cuts: this they do by turns, going from tree to tree until the bag is full. Care is taken not to cut the bark wet, and if it ſhould happen to be ſo, it is carried directly to the low country to dry, for otherwiſe it loſes its colour, turns black and rots; and if it lie any time in the hut without being ſpread, it runs the ſame riſk; ſo that if the weather permit, it remains as ſhort a time there as poſſible, and whilſt the Indians are cutting, the mules are employed in carrying the bark to the drying place, where it is ſpread in the open air and frequently turned[*].

The trees are ſaid ſoon to periſh on being ſtripped of their bark, and hence a ſcarcity of it has been apprehended. Condamine however aſſerts, that the young trees do not die by loſing their bark, but ſend out freſh ſhoots from the baſe; and as the trees which ſtand to any conſiderable age, probably increaſe by ſeed, the fear that this valuable bark may be exhauſted ſeems to be groundleſs.

We have no ſatisfactory account at what time, or by what means the medicinal efficacy of the Peruvian Bark was firſt diſcovered. Some of the tales which are commonly related have too fabulous an air to juſtify the recital of them here.

Geoffroy relates, that the uſe of the Bark was firſt learned from the following circumſtance. Some Cinchona trees being thrown by the winds into a pool of water, lay there till the water became ſo bitter that every body refuſed to drink it, till one of the neighbouring inhabitants being ſeized with a violent paroxyſm of fever, and finding no other water to quench his thirſt, was forced to drink of this, by which means he became perfectly cured; and afterwards relating his caſe to others, they made uſe of the ſame remedy.

The uſe of this excellent medicine was very little known till about the year 1638, when a ſignal cure having been performed by it on the Spaniſh Viceroy's lady, the Counteſs del Cinchon, at Lima, it came into general uſe, and hence was diſtinguiſhed by the appellation of *pulvis Comitiſſæ, cortex china china* or *chinchina, kina kina* or *kinkina, quina quina* or *quinquina*. The Counteſs, on her recovery, is ſaid to have diſtributed a large quantity of the Bark among

* Vahl.

* Arrot. in philoſ. tranſ. vol. 40. p. 83.

the Jeſuits, in whoſe hands it acquired ſtill greater reputation, and by them it was firſt introduced into Europe, and thence called Jeſuit's Bark, *cortex s. pulvis jeſuiticus, pulvis patrum*[*], and alſo Cardinal de Lugo's powder; that charitable prelate having bought a large quantity of it at a great expenſe for the uſe of the poor at Rome.

This Bark is brought to us in pieces of different ſizes, ſome rolled up into ſhort quills, and others flat. Thoſe who affect to be nice in the choice of their drugs, prefer ſuch pieces as are rolled up about the ſize of a common quill. The outſide is browniſh and ſometimes whitiſh: the inſide of a fine ferruginous brown. To the taſte it is aſtringent and bitter, and it has an advantage over other bitters in being aromatic. To enumerate its virtues would require the extent of a volume. Morton, the contemporary of Sydenham, was one of the firſt who made conſiderable uſe of the Bark. From us it was carried into France, where the Dauphin was cured by it. Boerhaave reſtrains the uſe of the Bark with almoſt innumerable cautions, while Hoffman and others are as boundleſs in its praiſe, and indeed all the prejudices in its diſavour are entirely done away, and its character has long been univerſally eſtabliſhed. This Bark gives out its virtues both to cold and boiling water; but the decoction is thicker, and gives out its taſte more readily. Its principal uſe however is in ſubſtance, and it may be employed in very conſiderable doſes with the moſt perfect ſecurity. Sometimes it is neceſſary to join opiates with it, in order to prevent its paſſing off too ſuddenly by acting as a purgative. A very elegant tincture of the Bark is kept in the ſhops under the title of Huxham's tincture: in which preparation the Bark is rendered ſtill more efficacious by the addition of orange-peel and ſnake-root.

It is not only in fevers of every kind that the Bark is ſo highly ſucceſsful a remedy, but alſo in numerous other caſes, and particularly in mortifications. It has alſo been much uſed of late in caſes of acute rheumatiſm, eſpecially after the violence of the diſeaſe has in ſome degree been moderated by the antiphlogiſtic treatment, or when an evident remiſſion has taken place. In the fluor albus, proſtuvia, and hæmorrhages of every kind, the decoction of the Bark is of excellent uſe; and the tincture taken in water of various parts, as chalybeate, *&c.* is extremely uſeful in caſes of decayed appetite. In ſhort, if any medicine deſerved the title of a panacea, the Bark would have the faireſt claim. Caſes however ſometimes occur in which its liberal exhibition is found hurtful: *viz.* where ſymptoms of congeſtion, or topical inflammation of the head appear, which are ſhewn by the redneſs of the eyes, phrenitis, delirium, *&c.* It has alſo been ſometimes accuſed of cauſing a degree of difficulty of breathing.

The other ſpecies of Cinchona approach in ſome degree to the virtues of the Peruvian or common officinal Bark, but ſeem leſs efficacious, and their power leſs perfectly aſcertained in practice. The red Bark indeed has been often conſidered as of ſtill higher efficacy than the common, and has been thought to be the Bark which, according to Arrot, the Spaniards called Caſcarilla colorada, and was probably the kind brought originally to Europe, and which proved ſo ſucceſsful in the hands of Sydenham, Morton, and Liſter; it appearing from the teſtimony of the oldeſt practitioners, that the Bark firſt employed was of a much higher colour than the common Bark.

2. The branches of this are pubeſcent towards the end. Leaves a ſhort ſpan in length, a hand in breadth, obtuſe, decurrent a little along the petiole at the baſe, tender, veined, pubeſcent beneath along the nerves: petiole two inches long, pubeſcent, convex underneath. Panicle terminating, brachiate, pubeſcent: partial peduncles twice trifid: pedicels very ſhort, one-flowered. Bractes minute, at the baſe of the pedicels. Calyx a ſuperior rim, with minute ovate ſharp teeth. Tube of the corolla thicker in the middle. Capſule an inch long, cylindric only a little narrowing at each end.

Native of Peru. Communicated to Vahl, by Juſſieu.

3. Branches jointed, the ſize of a ſwan's quill, villoſe-tomentoſe. Leaves more than a hand in length, oblong, the younger ones elliptic, ſomewhat cartaceous, the upper ſurface ſmooth and ſhining, the lower pubeſcent and ribbed, the ribs villoſe-tomentoſe; the younger ones hairy above, eſpecially along the nerves: petioles an inch long, flat above, convex beneath. Stipules lanceolate, deciduous, longer than the petiole, connate at the baſe, ſmooth within. Panicle terminating, trichotomous, pubeſcent. Peduncles compreſſed three-flowered an inch and half in length. Flowers ſubſeſſile. There is a linear-lanceolate bractе on each ſide at the diviſions of the univerſal peduncle, an inch in length; and another, which is ſmall and awl-ſhaped at the baſe of each flower. Calyx bell-ſhaped, pubeſcent, ſilky within, commonly five-toothed, ſometimes but ſeldom ſix-toothed, the teeth obſcure but ſharp. Corolla coriaceous, an inch and half long, tomentoſe with minute hairs preſſed cloſe: ſegments of the border lanceolate, blunt, the length of the tube. Filaments very ſhort: anthers linear ſtanding juſt above the throat. Germ five-cornered: ſtigma bifid. Capſule cylindric, two inches long, ſmooth, a little narrower at the baſe: the valves opening in a ſinus at top and bottom.

Native of Santa Fé. Vahl received it from Ortega.

It is deſcribed in the latter editions of the *Syſtema vegetabilium* under the name of *C. officinalis*; and is there ſaid to have been received from Mutis.

4. According to Jacquin, this is an erect branching ſhrub ten feet high: from fifteen to twenty feet in height, as Swartz affirms. Branches round below, with an aſh-coloured bark, at the end ſomewhat compreſſed, purpliſh brown with aſh-coloured dots. Leaves petioled an inch and half in length, ovate (ovate-lanceolate or lanceolate) acuminate, ſmooth, veined: petioles ſhort, (ſay, ſmooth.) Stipules ſmall, acuminate, broader than long, ciliate. Peduncles axillary ſolitary oppoſite the length of the petioles. Calyx a rim with five minute teeth. Corolla ſmooth: ſegments of the border linear, the length of the tube. Stamens the length of the corolla. Style the length of the ſtamens: ſtigma thickened undivided. Capſule oblong ſmooth and even[*].

Jacquin ſays, that the leaves are from two to three inches long, and reflex at the end; that the flowers are of a very pale fleſh-colour, and exceedingly ſweet-ſcented; and the capſules before they are ripe green, very bitter, and abounding in a juice that excites a heat and irritation on the lips and noſtrils.

Swartz adds, that the leaves are chiefly crowded at the ends of the twigs; that they are decuſſated, and channelled along the midrib; that the ſtipules are blackiſh: that the peduncles are both terminating and axillary, one-flowered and ſmooth: that the tube of the corolla is an inch long and quinquangular; the ſegments reflex, revolute at the edge: that the filaments are inſerted towards the baſe of the tube; the anthers narrow, almoſt the length of the filaments.

Dr. Wright informs us, that the Jeſuit's Bark tree of Jamaica and the Caribbees riſes only to twenty feet, with a trunk not thick in proportion, but hard, tough, and of a yelloweſh-white colour in the inſide. The leaves are of a ruſty-green, and the young buds of a blueiſh-green hue. The flowers are of a duſky yellow colour, and the pods black: when ripe they ſplit in two, and are, with their flat brown ſeeds, in every reſpect ſimilar to thoſe of *Cinchona officinalis*. The bark in general is ſmooth and gray on the outſide, though in ſome rough and

[*] Woodville, 548.

[*] Vahl.

scabrous: when well dried, the inside is of a dark-brown colour. Its flavour at first is sweet, with a mixture of the taste of horse-radish and of the aromatics of the east, but when swallowed, of that very bitterness and astringency which characterizes the Peruvian Bark. It grows near the sea-shore, and is called in Jamaica Sea-side Beech.

Linnæus, in the thirteenth edition of Systema Vegetabilium, doubts whether this species belongs to the genus Cinchona.

It is a native of the West Indies, and was introduced in 1780, by W. P. Perrin, Esq.[a]

5. Trunk upright round smoothish, a fathom or more in height, the thickness of the human arm: branches round spreading opposite, the upper ones herbaceous, compressed at the joints. Leaves acuminate, spreading, smooth and even, a hand in length, deep green, with the midrib purple underneath: petioles round, spreading, longer than the interstices of the leaves, scarcely an inch in length. Stipules membranaceous, acute. Peduncles solitary, axillary, round except at the tip where they are compressed, the length of the leaves. Corymb large, trichotomous. Partial peduncles three, angular, trifid, from the wings of the floral leaves, an inch in length. Floral leaves opposite, at the divisions of the corymb, like the branch-leaves, an inch long. Pedicels one-flowered, two, three, four or more together, round, slender, erect, half an inch in length. Bractes membranaceous, solitary, acute, very minute, at the base of each pedicel. Flowers white, red on the outside: before they open they appear of a dusky purple. The bark is extremely bitter, and subastringent, very like the common Jesuit's Bark.

Native of the islands of Tongatabu and Eaoowe, in the South Seas; where it is cultivated for the pleasant odour or elegance of the flowers[b].

6. Branches round at bottom, with an ash-coloured bark, purplish at top. Leaves on very short petioles, an inch and half long, not at all shining, bluntish, marked with lines on the upper surface along the nerves. Stipules ovate acute. Panicle trichotomous: peduncles compressed, three-flowered. Bracte bristle-shaped at the base of the pedicels. Teeth of the calyx bristle-shaped, the length of the germ. Corolla and stamens as in the next species. Germ five-cornered.

It differs from *C. floribunda* in having the leaves by no means shining, rounded at the base, smaller, marked with lines on the upper surface: the panicle small: the segments of the calyx bristle-shaped and the length of the germ: the capsules not even, but marked with five raised lines.

Native of the island of Dominica.

7. The whole of this species is very smooth. The branches are round at bottom, but obscurely four-cornered at top and purplish. Leaves resembling those of the Coffee shrub, frequently a short span in length, spreading very much, lanceolate-elliptic, on the upper surface even, shining, with a groove along the middle, on the under paler, veined, nerved, the nerves oblique and but little raised: petiole half an inch in length, convex beneath. Stipules oblong, obtuse, sheathing. Panicle brachiate, spreading, peduncle alternately compressed, and a little below the ramifications. Calyx a superior rim, with very short subulate teeth. Corolla as in *C. variifera*, with the tube an inch long; segments of the border linear. Filaments capillary, the length of the tube. Style the length of the filaments. Stigma ovate, undivided[c].

Native of St. Lucia, Martinico and Hispaniola. In the first of these islands it was discovered by Mr. Alexander Anderson, about the year 1779, in the woods near the Grand Cul de Sac.

The tree there is nearly the size of a Cherry-tree, seldom thicker than the thigh, and tolerably straight: the wood is light and porous, without any of the bitterness and astringency of the bark. The flowers, which appear in june, are in small tufts, at first white, but afterwards purplish. The bark is of a lighter red, than what was sent to St. Lucia under the name of Red Bark; inclining more to the colour of Cinnamon. The tree grows in a stiff red clay; delights in a shady situation, a N. W. aspect, under larger trees, and is generally near the middle of a hill, by some running water[d].

8. The whole plant smooth as in *C. macrocarpa*: the leaves also nearly as in that, on very short petioles. The flowers only half the size of those of *C. floribunda*. Capsule obovate, with eleven ribs.—Native of Jamaica[e].

9. This is a small tree from ten to fifteen feet in height, with an upright smooth trunk, covered with a wrinkled ash-coloured bark, which becomes brown and striated near the root. Branches long, subdivided, lax, smooth, covered with an ash-coloured bark: branchlets almost simple, round, pubescent. Leaves acuminate with a bluntish tip, spreading, nerved, somewhat veiny, dusky green but pubescent beneath. Petioles short, round, pubescent. Stipules minute, ovate, acute. Panicles trichotomous or trifid. Pedicels one-flowered, the length of the peduncles, erect: both they and the peduncles villose-pubescent. Calyx pubescent, ferruginous, with erect linear acute long segments. Corolla white, half as large again as that of *C. variifera*, and odorous; tube an inch long, segments of the border the length of the tube. Stigma thickened, oblong, entire. Capsule oblong, roundish. Native of Hispaniola[f].]

CINERARIA. (*From cinis, ashes.—Ash-coloured: most of the species being gray, hoary, or the colour of wood ashes.*)

*Lin. gen. n.* 957. *Reich.* 1036. *Schreb.* 1294. *Gertn. t.* 170. *Juss.* 181.

Class. 19. 2. Syngenesia Polygamia Superflua.

Nat. order of *Compositæ Discoideæ. Corymbiferæ* Juss.

GENERIC CHARACTER.

CAL. *Common* simple, many-leaved: *leaflets* equal.

COR. *Compound* radiated. *Corollets* hermaphrodite, equal, numerous in the disk: *female* ligulate, the same number with the leaves of the calyx, in the ray.—*Proper* of the hermaphrodite funnel-shaped, with an erect, five-cleft border: *female* ligulate, lanceolate, toothletted at top.

STAM. in the hermaphrodite, *filaments* five, filiform, short. *Anthers* cylindric, tubulous, five-cleft at top.

PIST. in the hermaphrodite, *germ* oblong. *Style* filiform, the length of the stamens. *Stigmas* two, almost erect—*females*, germ oblong; style filiform, short; stigmas two, oblong, bluntish, revolute.

PER. none. *Calyx* unchanged.

SEEDS solitary, linear, quadrangular. *Pappus* hairy, copious.

REC. naked, flattish.

OBS. C. glauca *and* purpurata *have a feathered pappus.*

ESSENTIAL CHARACTER.

*Cal.* simple, many-leaved, equal. *Pappus* simple. *Recept.* naked.

SPECIES.

1. Cineraria geifolia. *Kidney-leaved Cineraria. Lin. spec.* 1242. *Reich.* 3. 818. *Berg. cap.* 289. Othonna geifolia. *Lin. spec. edit.* 1. 924. Solidago. *Lin. hort. cliff.* 410. *n.* 7. Jacobæa. *Comm. hort.* 2. 145. *t.* 73. *Seb. muf.* 1. *t.* 22. *f.* 3. (good.)
*Peduncles branching, leaves kidney-shaped subcordated lobed toothed petioled.*

2. Cineraria cymbalarifolia.
*Lin. spec.* 1242. *Reich.* 3. 818. *amæn.* 6. *asr. n.* 81. *p.* 106.
β. Jacobæoides afra, geranii columbini fol. *Vaill. act.* 1720. *p.* 300.
*Leaves lyrate, the end-leaf kidney-shaped toothletted; upper stem-leaves clasping lobed quite entire.*

[a] Hort. kew. [b] Forster. [c] Vahl.

[d] Davidson, in Philos. trans. vol. 74. p. 452—456. [e] Vahl. [f] Swartz.

3. Cineraria

3. Cineraria fibirica. *Siberian Cineraria.*
*Lin. spec.* 1242. *fyſt.* 764. *Reich.* 3. 819. *mant.* 472.
Othonna. *Lin. hort. upſ.* 273. *n.* 1.
Jacobææſtrum cacaliæ folio. *Amm. ruth.* 221. *t.* 24.
*Racemi ſimple, leaves cordate obtuſe toothletted even, ſtem entirely ſimple one-leafed.*
4. Cineraria glauca.
*Lin. ſpec.* 1242. *fyſt.* 764. *Reich.* 3. 819.
Solidago. *Gmel. ſib.* 2. 166. *t.* 74.
*Racemæ ſimple, leaves ſpatulate-cordate quite entire, ſtem quite ſimple.*
5. Cineraria ſonchifolia.
*Lin. ſpec.* 1243. *Reich.* 3. 819.
Jacobæa. *Breyn. prodr.* 3. 31. *t.* 21. *f.* 1.
*Leaves ſtem-claſping ſinuate differn.*
6. Cineraria cordifolia. *Heart-leaved Cineraria.*
*Lin. fyſt.* 764. *ſuppl.* 375. *Jacqu. auſtr.* 2. 47. *t.* 176. *Gouan. illuſtr.* 69.
C. alpina α. *Lin. ſpec.* 1243.
β. C. cordifolia auriculata. *Jacqu. auſtr.* 2. *t.* 177.
*Cluſ. hiſt.* 2. 23. *f.* 1.
Senecio alpinus. *Lin. ſuppl.* 371. *Hall. helv. n.* 63.
*Panicle few-flowered, ſtem-leaves petioled cordate ſharply ſerrate ſmooth, ſtem angular.*
7. Cineraria criſpa.
*Lin. fyſt.* 764. *ſuppl.* 376. *Jacqu. auſtr.* 2. 48. *t.* 178.
*Flowers panicled, ſtem-leaves ſpatulate-oblong ſerrate obtuſe claſping, dilated and toothed at the baſe.*
8. Cineraria integrifolia. *Mountain Cineraria or Fleawort.*
*Lin. fyſt.* 764. *Engl. bot.* 152. *Wither. arr.* 920.
C. alpina. *Hudſ. angl.* 370. *Relh. cant. n.* 622. fig.
*Lin. ſpec.* 1243. γ.
C. integr. pratenſis. *Jacqu. auſtr.* 2. 48. *t.* 180.
Senecio. *Hall. helv. n.* 68.
Jacobæa montana non laciniata. *Raii hiſt.* 272. *n.* 4. *ſyn.* 178. *n.* 4. *Petiv. brit. t.* 17. *f.* 4. (Cambridge Ragwort.)
*Leaves oblong, obſcurely toothed* (or *almoſt entire*) *ſhaggy; flowers in a ſimple involucred umbel, (ſometimes ſingle.)*
9. Cineraria longifolia.
*Lin. fyſt.* 765. *Jacqu. auſtr.* 2. *t.* 181. & *t.* 179.
*Leaves obſcurely toothletted, all oblong.*
10. Cineraria paluſtris. *Marſh Cineraria.*
*Lin. ſpec.* 1243. *Reich.* 3. 820. *Gærtn. fruct.* 2. 446. *Pl. dan. t.* 573. *Hudſ. angl.* 369. *Wilb.* 919. *Engl. bot. t.* 151.
Othonna paluſtris. *Lin. ſuec. n.* 778.
Solidago. *Lin. hort. cliff.* 410. 10. *Gmel. ſib.* 2. 158. *t.* 72.
Conyza. *Bauh. pin.* 266. *Ger. emac.* 483. *f.* 5. *Park.* 126. 3. *Pet. brit. t.* 16. *f.* 6. *Raii ſyn.* 174. 3. *hiſt.* 264. 12.
Jacobæa. *Mor. hiſt.* 3. 110. *ſ.* 7. *t.* 19. *f.* 24.
*Flowers corymbed, leaves broad-lanceolate tooth-ſinuated, ſtem villoſe.*
11. Cineraria aurea.
*Lin. ſpec.* 1244. *Reich.* 3. 822.
*Flowers corymbed, leaves lanceolate-ſerrate tomentoſe underneath.*]
12. Cineraria maritima. *Sea Cineraria.*
*Lin. ſpec.* 1244. *Reich.* 3. 822. *Villars dauph.* 3. 225.
Othonna. *Lin. hort. upſ.* 273. 2.
Solidago. *Lin. hort. cliff.* 140. 11.
Jacobæa maritima. *Bauh. pin.* 131. *Ger.* 218. *f.* 2. *emac.* 280. *f.* 2. *Park.* 669. *f.* 7. *Raii hiſt.* 286. 6.
Cineraria. *Dod. pempt.* 642. not the figure.
β. C. tomentoſa. *Mill. dict. n.* 5.
*Flowers panicled, leaves pinnatifid tomentoſe, diviſions ſinuated; ſtem ſtrubby.*
[13. Cineraria canadenſis.
*Lin. ſpec.* 1244. *Reich.* 3. 822.
Jacobæa maritima f. C. latifolia. *Bauh. pin.* 131. *prodr.* 69. *f.* 1.
*Flowers panicled; leaves pinnatifid ſubvilloſe, diviſions ſinuated; ſtem herbaceous.*
14. Cineraria capillacea.
*Lin. fyſt.* 765. *ſuppl.* 375.
*Leaves pinnate, pinnæ capillaceous entire.*

15. Cineraria linifolia.
*Lin. ſpec.* 1244. *Reich.* 3. 822. *amæn.* 6. *aſv. n.* 82. *p.* 106.
*Peduncles one-flowered, leaves ſcattered, ſtem ſtrubby.*
16. Cineraria purpurata.
*Lin. fyſt.* 765. *Reich.* 3. 822. *mant.* 285.
*Stem ſubbiflorous, leaves obovate ſubtomentoſe.*]
17. Cineraria Amelloides. *Blue-flowered Cineraria, or Cape Aſter.*
*Lin. ſpec.* 1245. *fyſt.* 765. *Reich.* 3. 823. *Berg. cap.* 290. *Gærtn. fruct.* 2. 446. *Curt. magaz. t.* 249.
Aſter. *Mill. fig. t.* 76. *f.* 2. *Raii ſuppl.* 158. *n.* 19.
*Peduncles one-flowered, leaves oppoſite ovate naked, ſtem underſtrubby.*
[18. Cineraria americana.
*Lin. fyſt.* 765. *ſuppl.* 373.
*Shrubby; panicles axillary, leaves alternate petioled broad-lanceolate ſerrate, ſmooth above and hoary underneath.*
19. Cineraria alata.
*Lin. fyſt.* 765. *ſuppl.* 374.
*Stem herbaceous; leaves obovate decurrent, flowers corymbed.*
20. Cineraria elongata.
*Lin. fyſt.* 765. *ſuppl.* 374.
*Leaves ſubcordate gnawn, peduncles very long ſubulate-ſcaly.*
21. Cineraria Cacalioides.
*Lin. fyſt.* 765. *ſuppl.* 374.
*Leaves columnar oblong fleſhy, panicle terminal elongated ſetu-flowered, peduncles alternate.*
22. Cineraria denticulata.
*Lin. fyſt.* 765. *ſuppl.* 375.
*Leaves lanceolate ſmooth toothletted, flowers panicled.*
23. Cineraria perfoliata.
*Lin. fyſt.* 765. *ſuppl.* 375.
*Leaves ovate cordate ſtem-claſping, peduncles one-flowered elongated.*
24. Cineraria linearis.
*Lin. fyſt.* 765. *ſuppl.* 375.
*Leaves lanceolate, tomentoſe underneath, ſerrated at the end, toothed at the baſe.*
25. Cineraria haſtifolia.
*Lin. fyſt.* 765. *ſuppl.* 376.
*Leaves haſtate, diviſions lateral biſid divaricated.*
26. Cineraria japonica.
*Lin. fyſt.* 766. *Thunb. jap.* 317.
*Leaves ſword-ſhaped toothed tomentoſe, flowers terminal.*

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27. Cineraria rotundifolia.
*Forſt. ſtirpl. auſtr. n.* 294.
Brachyglottis rotundifl. *Forſt. char. gen.* 46. *n.* 2.
*Panicles few-flowered, leaves petioled ovate-roundiſh quite entire tomentoſe underneath, ſtem arborous.*
28. Cineraria repanda.
*Forſt. fl. auſtr. n.* 295.
Br. repanda. *F. char. gen.* 46. *n.* 1.
*Panicles compound racemed diffuſed, leaves petioled ovate repand-ſinuate, tomentoſe underneath, ſtem arborous.*
29. Cineraria lanata. *Woolly Cineraria.*
*Curt. mag. t.* 53. *L'Herit. ſert. angl. n.* 5. *t.* 30.
*Peduncles one-flowered; leaves cordate-roundiſh ſeven-angled lanuginous underneath.*
30. Cineraria humifuſa. *Trailing Cineraria.*
*L'Herit. ſert. angl. n.* 1.
After ſ. luteo, fol. cymbalariæ. *Raii hiſt.* 3. 158.— & africa. min. monanthes luteus, &c. 161.
*Peduncles one-flowered, leaves kidney-form ſomewhat angular, petioles eared or naked at the end.*
31. Cineraria viſcoſa. *Clammy Cineraria.*
*L'Herit. ſert. angl. n.* 2.
*Peduncles one-flowered, leaves pinnatifid-lobed acute viſcid ſomewhat fleſhy.*
32. Cineraria populifolia. *Poplar-leaved Cineraria.*
*L'Herit. ſert. angl. n.* 6.
Cacalia appendiculata. *Lin. ſuppl.* 352.
*Flowers corymbed; leaves cordate ſomewhat angular tomentoſe underneath; petioles having ſeveral pairs of appendicles at the end.*

33. Cineraria aurita. *Purple-flowered Cineraria.*
*L'Herit. ſert. angl. n.* 7. *t.* 31.
*Flowers corymbed; leaves cordate ſomewhat angular tomentoſe underneath; petioles two-eared at the baſe.*

34. Cineraria malvæfolia. *Mallow-leaved Cineraria.*
*L'Herit. ſert. angl. n.* 9. *t.* 32.
*Flowers cymed; leaves cordate angular ſomewhat tomentoſe underneath; petioles ſimple.*

35. Cineraria cruenta. *Purple-leaved Cineraria.*
*L'Herit. ſert. angl. n.* 11. *t.* 33.
*Flowers cymed; leaves cordate angular purple underneath; petioles eared at the baſe.*

36. Cineraria lobata. *Lobed Cineraria.*
*L'Herit. ſert. angl. n.* 13. *t.* 34.
*Flowers ſubcorymbed; leaves roundiſh many-lobed ſmooth; petioles eared at the baſe; calyxes ſubcalycled.*

37. Cineraria repanda.
*Lour. cochinch.* 501.
*Panicled diffuſed, leaves ovate-lanceolate ſerrate-repand ſmooth.*

38. Cineraria minuta.
*Cavan. hiſp.* 21. *n.* 33. *t.* 33. *f.* 3.
*Leaves pinnatifid, ſtem one-flowered capillary.*

39. Cineraria glabra.
*Swartz prodr.* 113.
*Flowers corymbed, calyxes cylindric, leaves oblong acute ſomewhat toothletted nerveleſs ſmooth on both ſides and a little ſucculent, ſtem ſhrubby.*

40. Cineraria diſcolor.
*Swartz prodr.* 114.
*Flowers corymbed, leaves oblong-lanceolate acuminate ſomewhat toothletted ſmooth, beneath white-tomentoſe, ſtem ſhrubby.*

41. Cineraria japonica.
*Thunb. jap.* 317.
*Leaves enſiform toothed tomentoſe, flowers terminating.*

DESCRIPTIONS, *&c.*

The leaves are commonly entire, but ſometimes pinnatifid. Moſt of the ſpecies are tomentoſe. Some have two or three ſcalelets at the baſe of the calyx, as in *Senecio*. *C. Amelloides* recedes ſomewhat from the genus [a].

In general *Cineraria* is *Cacalia* furniſhed with a ray. The difference between this and *Jacobæa*, which border very much on each other, conſiſts (according to Gærtner) not ſo much in the mortified ſcales of the calyx, as in the one having entire, the other pinnatifid leaves: hence he removes *C. maritima*, *canadenſis*, and *capillacea*, into the genus *Jacobæa*.]

1. *Kidney-leaved Cineraria* has weak ſtalks trailing on the ground; but if ſupported riſing four feet high. [They are herbaceous, round, ſtriated, and have white hairs ſcattered over them. Leaves alternate, ſmoothiſh above, ſubhirſute beneath, eſpecially the more tender ones, two inches long. Petioles roundiſh, hirſute, longer than the leaves. Stipules rounded, large, toothed. Corymb terminating, almoſt ſimple, naked, pubeſcent. Bractes linear-ſubulate. Common calyx roundiſh, truncate; ſcales very many, linear, acute, with ſcattered hairs on the outſide, but very ſmooth within, upright, parallel, contiguous, with thin membranaceous edges, and a few ſmall ſubulate ſcales at the baſe. Corolla yellow.] in ſhape like that of common Ragwort. [Florets of the ray obtuſe, emarginate, nerved, ſpreading. Germ obovate, compreſſed, rugged on the edge: ſtyle ſubulate. Pappus ſimple or very finely ſubplumoſe, ſeſſile, the length of the corolla [b].

Native of the Cape of Good Hope. Cultivated in 1759, by Mr. Miller here [c]: but in the Amſterdam garden in 1697, from ſeeds ſent from Africa [d].

2. Root a ſolid bulb. Stem herbaceous, ſimple, even. Lower leaves having the petioles ſtem-claſping at the baſe, lyrate; upper ſtem-leaves ſeſſile, claſping, cordate-lanceolate, ſcarcely toothed. Flowers pedunculed, terminating, many. Ray of the corolla purple. There is a variety with ſimple trifid leaves, and the lobes trifid.—Native of the Cape of Good Hope [e].

3. Root perennial. Stem undivided, the height of a man. Stem-leaves with petioles dilated at the baſe and claſping. At the baſe of the calyx are two oblong bractes, the length of the calyx and withering [f].

Native of Siberia, the Levant, and perhaps the Pyrenees. Introduced in 1784, by Mr. John Bell [g].

4. The leaves are of a glaucous hue, like thoſe of *Crambe maritima*, and are rather fleſhy; the petioles are edged in a ſpatulate form. The ſtem is yet higher than that of the foregoing ſort, and the ray of the flower more copious. It is perennial, and a native of Siberia [h].

5. The lower leaves are ſinuate, the upper ſimple and quite entire. Flowers large and purple. Native of the Cape of Good Hope.

6. Root perennial fibroſe brown. Stem from one to two feet high, ſtraight, obſcurely angular, a little ſtriated at top, ſiſtuloſe, ſimple, almoſt ſmooth and green. Peduncles ſtriated, ſlightly villoſe, varying in number, terminate the ſtem in a ſort of umbel, ſupported by narrow lanceolate ſeſſile leaves, and a few of them furniſhed with linear ſcales, eſpecially at the baſe of the calyx, which conſiſts of about twenty, ſublinear, acute, concave, erect, equal, ſmooth ſcales. Corollas yellow: florets of the ray about twenty, ſublinear, with two or three teeth at the end. Pappus, when viewed with a magnifier, toothletted.

But the difference between this, and *n.* 7, 8, 9, conſiſts principally in the leaves; which are broad-cordate, ſerrate-crenate, veined, ſhining, more or leſs villoſe on the back, petioled: the petioles of the root-leaves and lower ſtem-leaves are long, keeled, naked and not in the leaſt winged; the following ſtem-leaves are winged; the upper ones run into the petiole, and loſe their cordate form [i].

Gouan remarks, that although this varies, yet it is ſufficiently different from the other varieties of Linnæus's *C. alpina*, in having all the leaves petioled cordate and doubly toothed, and commonly two ſtipules at the baſe of the petiole; the peduncles branched and many-flowered, with ligulate leaflets on them; the pedicels long and one-flowered [k].

The younger Linnæus ſays, that it differs ſufficiently from the third ſort, in its panicled flowers not branching, in its petioled ſtem-leaves, and in its ſpreading calyx [l].

β. In the variety, as Murray obſerves, the petioles of the upper leaves are appendicled at the baſe, not in the middle; ſo that it does not ſeem to be the ſame with *Senecio alpinus* of the Supplement [m]. This obſervation however does not ſeem to be well founded.

Native of Auſtria and Switzerland. Introduced in 1775, by Doctors Pitcairn and Fothergill [n].

7. This is two feet high. The peduncle and calyx are more villoſe than in the foregoing. Root-leaves cordate, decurrent along the whole of the petiole, and laciniate-gaſhed. Upper ſtem-leaves oblong, acute, ſharply and unequally gaſh-ſerrate, ſeſſile; all curled and waved about the edge.—Native of Auſtria [o].

8. According to Linnæus, this plant is extremely variable. Jacquin has examined all the ſuppoſed varieties in their native places of growth, and has figured them from t. 176 to t. 181. of his Auſtrian Flora—t. 176. is C. cordifolia, *n.* 6.—t. 177. is var. β. of the ſame—t. 178. is C. criſpa, *n.* 7.—t. 179. is probably the ſame with longifolia—t. 180. is our plant, only taller—t. 181. is C. longifolia, *n.* 9. according to Murray, in his edition of Lin. ſyſt.—De La Chenal (act. helv. 8. p. 137.) is of opinion that Jacquin's plants may be comprehended under two ſpecies; 1. with leaves cordate-oblong,

[a] Juſſieu. [b] Bergius. [c] Hort. kew. [d] Commelin. [e] Linn. amoen. [f] Linn. mant. [g] Hort. kew. [h] Linn. ſpecc. and ſyſt. [i] Jacquin. [k] Illuſtr. [l] Suppl. [m] Murr. in ſyſt. [n] Hort. kew. [o] Jacquin.

and naked petioles: 2. with the lower leaves ovate-oblong, on petioles not naked but membranaceous; the upper lanceolate elliptic or only ligulate, stem-clasping. The first containing t. 176 and 177. of Jacquin, and the Senecio of Haller helv. n. 63.— The second, t. 179, 180, 181 of Jacquin, and the Senecciones of Haller, n. 67 and 68. C. alpina *a*. Lin. spec. is Senecio alpinus, *suppl.* and *n.* 63. of Haller.

The several varieties are found on the Alps and Pyrences, in Switzerland, Austria, about Montpelier, in Siberia, *&c.*

The plant which grows in high pastures or open chalky downs in some parts of England, as on Gogmagog-hills, Barrlow-hills, and Newmarket-heath, and near Basingstoke and Andover, has the radical leaves numerous, spreading on the ground, ovate, obovate or spatulate, obscurely toothed but always so more or less, and turned back on the edge, generally lengthened out at the base, and clothed with loose shaggy wool. Stem three to six inches high (sometimes eight, nine, or twelve) upright, simple, woolly, angular, or furrowed. Stem-leaves lanceolate, woolly, half-stem-clasping, subappressed, very entire, alternate. Flowers one to four, seldom more, yellow. Bractes (forming a sort of involucre) ligulate, tomentose, one at the base of each peduncle. Peduncles unequal. Florets of the ray ten to fifteen, nearly oval with a three-toothed top—of the disk numerous, prominent. Calyx furrowed with scarious edges. Seeds hirsute [5].——Perennial; flowering in may and june.

9. All the leaves of this are oblong: the root-leaves are attenuated into the petiole, and very slightly toothed. It differs very little from *C. integrifolia alpina* figured by Jacquin in t. 179. except that in the latter the leaves are much more toothed. Native of Austria [6].

10. Leaves thick, tomentose and almost clammy, covering the stem quite up to the flowers; the lower cut, and scarcely semipinnatifid. Root perennial, large, fibrose, running deep in muddy ditches. *Stem* one to three feet high, stout, hollow, with a thick clammy long wool: with a few smaller ones, all erect, unbranched, angular and striated. *Leaves* varying extremely in form and manner of growth, with the same wool as the stem, sessile or half-stem-clasping, waved, sinuated, and sometimes barely toothed; those immediately beneath the spike of flowers entire. All the hairs pellucid, and finely jointed like a Conferva. *Peduncles* branching. *Bractlet* subulate, one on each peduncle. *Calyx*, scales nearly equal, lanceolate, woolly, membranaceous at the edge. *Corolla* pale yellow: *florets* of the ray oval, veined, with two or three teeth at the end, or entire; four lines long, with a short narrow tube: of the disk somewhat shorter. *Seeds* small: *pappus* as long as the tube of the corolla, with few rays; or, according to Gærtner, capillary, white, soft, scarcely toothed, four times as long as the seed. He describes the seeds as columnar, deeply marked with sharp grooves, alternately deeper. Receptacle slightly convex, with distant pits on it, the interstices fungose, dotted and naked.

Marshes in many parts of Europe: with us in Lincolnshire, about Marsh and Chatteris in the isle of Ely, near Norwich, Yarmouth, and Hadiscoe in Norfolk, about Pillin-moss in Lancashire, and Aberavon in Merionethshire.

β. A variety, with leaves not jagged is mentioned by Ray to have been found by him in Norfolk *Hist.* 263. n. 10. He looks upon it to be *Cineya belenitis, mollita incana* Lob. ic. t. 347. f. which figure is reprinted in Ger. emac. 484. 8. and copied in Park. 126. 4. Mor. hist. s. 7. t. 19. f. 23. and Petiv. t. 16. f. 5. It is probably C. alpina β. Helenitis. Lin. spec. 1244 [7].

γ. A variety observed by Mr. Woodward near Ramsey in Huntingdonshire. Less woolly than α. Stem slender, about eighteen inches high. Leaves ligulate-lanceolate, toothed; the lower about four inches long, the upper two and a half to one and a half, and not more than one-fourth wide; not so numerous as in α. Flowers smaller; but the fructification perfectly similar [8].

11. Stature of *Senecio paludosus*, but the flowers twice as large, yellow, with a large ray. Pedicels with some linear bractes. Leaves equally and distinctly serrate, tomentose underneath, obscurely villose above. Stem villose [9].

Siberia. Perennial.]

12. Stems many, woody, two or three feet high, divided in many branches, which have a white downy bark. Leaves very woolly, six or eight inches long, deeply sinuated, and jagged on their borders. The stems which support the flowers are a foot or more in length, having two or three small leaves on each, shaped like those below, and terminated by many yellow flowers growing in panicles, (or rather corymbs) shaped like those of common Ragwort; these appear from june to august, and the seeds ripen the beginning of october.

[Gerard and Parkinson speak of this plant as a native of Britain. Johnson (Ger. emac.) corrected the error, and informs us that it then grew in the garden of Mr. Ralph Tuggy. Ray says it is very common every where on the coast of the Mediterranean, but that you will look for it in vain in England or any of the northern countries of Europe. Yet Mr. Miller affirms that it grows naturally on the coasts of England and Wales.]

β. The stems of this variety are more woody, rise higher, and do not branch so much: the leaves are broader, not so much sinuated, and of a very dark green on their upper side: the flowers are produced in smaller bunches, and rarely produce seeds in England; nor are the plants so hardy.

It is a native of the sea coasts of Dauphiné, Italy, and Sicily.

[13. The daughter of the foregoing; the leaves however not tomentose, but only subvillose, especially underneath. The ray of the corolla spreading, but not revolute. Stem annual, not perennial. Scales of the calyx a little mortified at the end, which is not the case in that. Found in Canada, by Kalm [10].

14. This bears great resemblance to *Othonna Capensis*, but the leaves are deeply divided and more slender. Observed at the Cape by Thunberg [11].

15. This differs from *Senecio linifolius*, in having the flowers solitary. Stem compound, rough. Leaves very much crowded, linear, very narrow. Peduncle filiform, longer than the leaves. Flowers small, yellow. Native of the Cape [12].

16. *Stem* simple, herbaceous, a foot high, tomentose, furrowed at bottom, ending at top in two very long petioles. *Leaves* alternate, at bottom crowded, petioled, having a few serratures and the edge bent down, obtuse, pubescent above, tomentose underneath, the size of *Chrysanth. Leucanthemum*. *Peduncles* terminal, two, the length of the stem, filiform, tomentose, erect, one-flowered. *Flowers* the size of *Amellus*, with a purple ray. *Calyx*, leaflets lanceolate, subequal, few, short, pubescent. *Pappus* plumose [13]. Native of the Cape of Good Hope.

17. It is very nearly allied to *Amellus Lychnitis*, but the receptacle of this has no chaffs. Many of the florets are abortive, but without any order, both in the disk and in the ray. The latter is blue, the leaves are petioled, ovate-oblong, green and not ash-coloured [14]. Calyx hemispherical, with linear leaflets spreading out horizontally when ripe. Receptacle moderately convex, alveolate, somewhat rugged. Seeds elliptic, compressed, pale, surrounded with a gently swelling whitish rim. Pappus capillary, very minutely toothletted, white, twice as long as the seed [15]. Stem purplish, rough, dividing into

[5] Roth. Woodw. Mif. Engl. bot.
[6] Woodw. Mif. and Engl. bot.
[7] Jacquin.
[8] Wetherlog.
[9] Woodw. Mif.
[10] Linn. spec.
[11] Ibid.
[12] Linn. suppl.
[13] Linn. spec. & amœn.
[14] Linn. mant.
[15] Linn.
[16] Gærtner.

many branches near the root, so as to form a low bushy plant, seldom rising more than two feet high; but the branches extending more than a foot on every side. Leaves about an inch long, and a third part of an inch broad, thick, succulent, rough, sessile, generally two, but sometimes three at a joint, or even four, two being larger and two smaller. Towards the upper part of the branches arise the peduncles, from four to six inches long, naked, each supporting one flower, the ray of which is of a fine sky blue, and after it has been some time expanded, turns back towards the calyx. The whole plant is a little acrid to the taste. It is never without flowers the whole year [a].

The seeds were sent to Mr. Miller from the Cape in the year 1753, and vegetated the following spring in the Chelsea garden.

18. The whole plant is clothed with an epidermis of very fine wool, which may easily be rubbed off like a thin membrane; the branches, petioles, peduncles, and lower surface of the leaves are white with it. *Stems* woody. *Leaves* veined, the consistence of evergreens. *Pedicels* of the flowers scaly with bractes, seldom two-flowered. *Calyx* equal, and appearing as if it were one-leafed; it has a few irregular scales at the base.——Observed in South America, by Mutis.

19. *Stem* erect, sparingly branched, angular, even, two feet high; with a branch next the flowers farther progressive. *Leaves* quite entire, even, oleraceous, decurrent to the next, an inch in length. *Peduncles* on the top of the stem, leafless. *Calyx* six-parted, ovate, even. *Florets* about sixteen, some of the marginal ones naked and female. It forms the link between the Cacalias and the Othonnas.

20. *Stem* erect, branched, a foot and half high, reddish, at the ramifications tomentose. *Leaves* petioled, distant, somewhat cut, unequally crenate, naked, bluntish, an inch in length. *Petioles* the length of the leaves, somewhat decurrent at the base. *Peduncles* terminal, one-flowered. *Calyx* entirely simple, divided into twelve or fourteen lanceolate leaves, the length of the flower. *Corolla* yellow, without any ray.

21. This very much resembles the *Cacalias* in the fleshyness of the herb.

22. Almost all the leaves are radical, and long; it has scarce any stem-leaves, except some small ones at the ramifications.

23. The whole plant is somewhat fleshy and glaucous.

24. *Stem* herbaceous, a foot high and more, erect, striated, hoary. *Leaves* alternate, subsessile, marked with lines, three-nerved underneath. *Panicle* decompounded, stiff, many times longer than the leaves, hoary, subfastigiate. *Calyxes* small. *Ray* of the corolla yellow. *Pappus* twice as long as the calyx.

25. *Stem* erect, more than a span high. *Leaves* alternate, petioled, three-parted; the middle part lanceolate, with a tooth or two sometimes on each side in the middle: petioles filiform, broader at the base. *Peduncle* elongated, with subulate scales. *Calyx* with about ten leaves. *Flower* yellow.—The seven last are natives of the Cape, and were detected by Thunberg, except this which we owe to Sparrmann [b].

26. *Stem* round, simple, erect, tomentose, a span high. *Leaves* alternate, acute, attenuated to both ends, erect; the lower a hand in length, the upper gradually shorter. *Flowers* solitary or tern, yellow. *Calyx* tomentose-woolly [c].

27, 28. Natives of New Zealand [d].

29. In the beauty of its blossoms, this species of *Cineraria*, lately introduced from Africa, by far eclipses all the others cultivated in our gardens; its petals exteriorly are of a most vivid purple, interiorly they are white. It flowers early in the spring;

[a] Miller's figures. [b] Linn. suppl. [c] Thunb. jap. [d] Forster.

and, by proper management, may be made to flower the whole year through [e].

Found in the Canary islands by Masson, and introduced 1780 [f].

30. This is allied to *C. cynthiariifolia*, but the flowers are yellow, and both they and the calyxes are villose and somewhat rugged; whereas in that the flowers are purple, and both they and the calyxes smooth [g].

31. Perhaps this may be nothing more than a variety of the foregoing [h].

They are both natives of the Cape of Good Hope, were found there by Masson, and were introduced in 1774 [i].

32. This is a shrub with an angular tomentose hoary stem. Leaves higher on long petioles (resembling those of white Poplar), not much emarginate at the petiole, nerved, veined, green and very smooth on the upper surface, but white on the under. Immediately below the leaf on the petiole are leaflets appendicled, or opposite in three pairs, very small petioled ovate quite entire, gradually smaller as they approach the leaf. Panicles terminating. Pedicels bracted. Flowers yellow [k]. Found in the Canary islands by Masson. Introduced in 1780 [l].

33. Flowers purple. Leaves resembling those of the Poplar; and varying with larger and smaller earieta [m].

Native of Madeira; found there by Masson, and introduced in 1777 [n].

34. Native of the Canary islands, and S. Miguel one of the Azores. Found there by Masson, and introduced in 1777 [o].

35. Native of the Canary islands. Introduced in 1777, by Masson [p].

36. This has the herb of a *Cineraria*, but having a bracte or two under the calyx, like a calycle, it can scarcely be distinguished from a *Senecio* [q].

Found at the Cape of Good Hope by Masson; and introduced in 1774 [r].

37. Stems suffruticose, erect, round, smooth, four feet high, branched. Leaves alternate. Flowers yellow, terminating. Calyx simple, oblong, equal. Corollets of the ray about eight, bifid. It is allied to *C. palustris* and *aurea*, from which however it differs in having the stem and leaves smooth, and the panicle diffused.

Native of China, near Canton [s].

38. Root annual. Stems often two, capillary, two inches high, at first woolly but afterwards almost smooth, one-flowered. Leaves alternate, sessile, violet-coloured underneath. Flowers terminating, solitary. Leaflets of the calyx ten, villose, slightly keeled, converging, red at the tip, when fruiting thickened at bottom. Corolla yellow: corollets in the ray ten, trifid at the end. Seeds ovate-oblong, very small, with a sessile, plumose pappus. Native of Spain near Aranjuez; flowering in may [t].

39, 40. Native of Jamaica [u].

41. Stem round, simple, erect, tomentose, a short span in height. Leaves alternate, acute, attenuated to both ends, erect, the lower ones a hand in length, the higher ones gradually shorter. Flowers solitary, or else three together, yellow. Calyx tomentose-woolly. Native of Japan [w].]

PROPAGATION AND CULTURE.

All the sorts may be increased by cuttings, planted in a shady border during the summer months, and duly watered. These will put out roots in a month or five weeks, soon after which it will be proper to transplant them into pots, because their roots are very apt to spread in the full ground. As most of these plants grow naturally at the Cape of Good Hope, they are too tender to live through the winters in England, in the open air, yet if they are nursed tenderly, they are apt to draw up weak

[e] Curtis. [f] Hort. kew. [g] L'Heritier. [h] Ibid. [i] Hort. kew. [k] Linn. suppl. [l] Hort. kew. [m] L'Heritier. [n] Hort. kew. [o] L'Herit. & hort. kew. [p] Hort. kew. [q] L'Heritier. [r] Hort. kew. [s] Loureiro. [t] Cavanilles. [u] Swartz. [w] Thunberg.

the surest way therefore to preserve them, is to make young plants annually from cuttings, and to place them in a common hot-bed frame in winter, where they may enjoy the full air in mild weather, but be screened from the frost: and in summer to place them abroad with other hardier sorts of exotic plants.

12. The twelfth is hardier; and when the cuttings or slips are well rooted, they should be planted in a dry rubbishy soil, where they will resist the cold of our ordinary winters very well, and continue many years; but in rich moist ground, the plants are often so very luxuriant in summer, as to be killed in winter where there is much frost.

17. This, and some of the others, may also be propagated by seeds, sown on a bed of light earth the beginning of april: and when the plants are fit to remove, part of them should be planted in pots to be sheltered in winter under a hot-bed frame; and the remainder under a warm wall in poor ground; where, if the winter prove favourable, they will live.

[29. Is by some persons kept in the stove, and may be made to flower earlier by that means; but it succeeds better in a common greenhouse, with no more heat than is just necessary to keep out the frost: it may indeed be kept in a common hot-bed frame, unless the weather prove very severe. What renders this plant a more valuable acquisition to the greenhouse, is its hardiness, its readiness to flower, and the facility with which it may be propagated by cuttings.—As this plant, with many others which are obliged to be confined, is liable to be infested with *aphides*; or, in vulgar phrase, to become lousy: the best way to have handsome, healthy, strong-flowering plants, is to procure a constant succession by cuttings, which strike very readily, if placed in a pot, and plunged into a bed of tan[b].

CINERARIA abrotanifolia. See *Othonna abrotanifolia.*

CINERARIA Othonnites. See *Othonna frutescens.*

CINNA.

*Lin. gen. n.* 15. *Reich. n.* 15. *Schreb.* 20.

Class. 1. 2. Monandria Digynia.

Nat. order of *Grasses.*

GENERIC CHARACTER.

CAL. *Glume* one-flowered, two-valved, compressed, linear, keeled, acuminate; one valve shorter, mucronated.

COR. *Glume* bivalve, compressed, linear: *outer* valve within the smaller valve of the calyx, longer, with somewhat of an awn below the tip; *inner* slender, shorter.

STAM. *Filament* one, capillary. *Anther* oblong, forked at each end.

PIST. *Germ* turbinated. *Styles* two, capillary, very short. *Stigmas* longer, plumous.

PER. none. *Glume* involving.

SEED one, cylindric.

ESSENTIAL CHARACTER.

*Cal.* Glume two-valve, one-flowered. *Cor.* Glume two-valve. *Seed* one.

SPECIES.

1. Cinna arundinacea.

*Lin. spec.* 7. *Reich.* 12. *Forsk. ægypt.* 3.

Agrostis Cinna. *Retz. obs.* 5. 18. *n.* 36.

DESCRIPTION, *&c.*

A grass, the size of Oats. *Root* perennial. *Culms* many. *Leaves* broadish, smooth, many-nerved, rugged about the edge. *Panicle* glaucous, oblong, attenuated, somewhat compressed, composed of imbricate racemes. Keel of the *calyx* rough; one of the valves having an awn-like point. *Anther* purple. *Styles* hirsute[a].

Native of Canada; whence the seeds were sent by Kalm.

Since this Grass varies with one, two, and three stamens, it may very reasonably be associated with the *Agrostides*[a]. Accordingly, it is now generally agreed to remove it into that genus: and Retzius assigns it the following specific character: *panicle contracted ovatish, flowers acuminate with one, two or three stamens, leaves plane rugged.*

CINNAMOMUM and CINNAMON. See *Laurus.*

CINQUEFOIL. See *Potentilla.*

————, Bastard. See *Sibbaldia.*

————, Marsh. See *Comarum.*

CIRCÆA. (Circæa, *Plin.* Κιρκαια, *Dioscor. From the famous enchantress Circe.*)

*Lin. gen. n.* 24. *Reich. n.* 25. *Schreb.* 31. *Gærtn. t.* 24. *Juss.* 319. *Tournef. t.* 155. *Raii meth.* 93.

Class. 2. 1. Diandria Monogynia.

Nat. order of *Aggregatæ. Onagræ* Juss.

GENERIC CHARACTER.

CAL. *Perianth* two-leaved: *leaflets* ovate, concave, deflected, deciduous.

COR. *Petals* two, obcordate, generally shorter than the calyx, spreading, equal.

STAM. *Filaments* two, capillary, erect, the length of the calyx. *Authers* roundish.

PIST. *Germ* turbinate, inferior. *Style* filiform, the length of the stamens. *Stigma* obtuse, emarginate.

PER. *Capsule* turbinate-ovate, hispid, two-celled, two-valved, opening from the base towards the top.

SEEDS solitary, oblong, narrower at bottom.

OBS. *The number* two *prevails in this genus remarkably.*

ESSENTIAL CHARACTER.

*Cor.* two-petalled. *Cal.* two-leaved, superior. *Seed* one, two-celled.

SPECIES.

1. Circæa lutetiana. *Common Enchanter's Nightshade.*

*Lin. spec.* 12. *syst.* 58. *Reich.* 23. *fl. suec. n.* 6. *hort. cliff.* 7. *Huds. angl.* 10. *With.* 23. *Curt. lond.* 3. *t.* 3. *Lightf.* 80. *Relh. cant. n.* 21. *Hull. belg. n.* 813. *Scop. carn. n.* 6. *Pollich pal. n.* 5. *Lees herborn. n.* 24. *Neck. gallob.* 3. *Krock. silef. n.* 8. *Lob. ic.* 266. *Besl. eyst. æstiv.* 3. *t.* 7. *f.* 1. *Ger.* 280. *emac.* 351. *Park.* 351. 1. *Fl. dan. t.* 210. *Berg. phyt.* 2. 155. *Baub. hist.* 2. 977. 1. *Rai hist.* 401.

*Stem* erect; *racemes* many; *leaves* ovate.

2. Circæa alpina. *Mountain Enchanter's Nightshade.*

*Lin. spec.* 12. *syst.* 58. *Reich.* 23. *fl. suec. n.* 7. *lapp. n.* 3. *Huds. angl.* 10. *With.* 24. *Lightf.* 80. *Hull. belg. n.* 814. *Scop. carn. n.* 7. *Krock. silef. n.* 9. *t.* 1. *Fl. dan. t.* 256. *Berg. phyt.* 2. *t.* 157.

C. minima. *Col. ecphr.* 2. 79. *t.* 80.

*Stem* prostrate; *raceme* single; *leaves* cordate.

DESCRIPTION, *&c.*

1. [*Root* perennial, creeping, toothed. The whole plant pubescent. *Stems* from twelve to eighteen inches in height and more, erect, round, villose, or smooth, seldom hairy; the joints swelled, and sometimes purplish, branching. *Leaves* opposite, petioled, subcordate, pointed, even, veined, paler underneath, about two inches long, and an inch broad: or ovate, subserrate, opaque: as *Linnæus*—or elliptic, subvillose, entire: as *Scopoli*; or cordate-ovate, acuminate, as Dr. Stokes describes them; a little woolly, as Dr. Withering—slightly hairy on the margin, as *Lightfoot*; or smooth, as *Pollich* affirms; sometimes reddish, and toothed on the edge: or betwixt toothed and serrate, the points being directed towards the end of the leaf, but the margin between the points hollowed out, according to Dr. Stokes: entire, waved or serrated, and ciliated, according to Haller: *Flowers* in simple racemes on the tops of the branches, both terminating and lateral; frequently solitary: sometimes more than forty flowers in a raceme. *Pedunculs* solitary, long, alternate; when fruit-bearing turned downwards. *Calyx* much thicker and coarser than the corolla; green, greenish red, or green with red points, or purple; when magnified, appearing to be beset with short, cylindrical hairs, ending in heads, just sensibly thicker than the body of the hair. *Corolla* small, whitish, reddish white, or flesh-coloured: *petals* the length of the calyx, and alternate with the leaflets of it. *Filaments* longer than the calyx. *Authers* rather large, whitish; pollen three-cornered.

[b] Curtis. [a] Lin. spec. [a] Reich.

nered. *Germ* hifpid and gray, ovate-compreſſed, at a ſmall diſtance below the calyx: *Style* thickeſt upwards, with a double green gland at its baſe: *Stigma* of a bright red, or fine pink colour. *Capſule* ſet with white hairs, hooked at the end. *Seeds* two, one of which is frequently abortive[a]. It may be preſumed, from the diſagreement of authors in their deſcription of this plant, that it is ſubject to variation. It is not uncommon in ſhady lanes and orchards, under moiſt hedges and walls, and in woods, flowering in July and auguſt.

The ſeeds ſtick by their little hooks to any thing that paſſes, and according to Boerhaave, this circumſtance gave occaſion to the name; the fruit laying hold on the cloaths of paſſengers, and drawing them to it, as Circe was fabled to do by her enchantments.

It is a weed frequently in gardens, and not very eaſily deſtroyed, the roots being creeping. Sheep, however, are ſaid to eat it; and though it has not found its way into the diſpenſatories, yet it is eſteemed very deterſive, and is recommended by Chomel againſt the piles, uſed both outwardly in a cataplaſm, and inwardly in an infuſion[b].

2. Linnæus doubts whether this be a diſtinct ſpecies from the firſt. Scopoli and moſt others have no doubt of their being ſpecifically different; and Haller relates that it does not become like the foregoing, and that it is no variety. According to Scopoli, the ſpecific difference does not conſiſt in an aſcending ſtem, a ſingle raceme, or a coloured calyx, but in the form, ſmoothneſs, and toothed edge of the leaves. Grimm remarked ſeveral racemes on one plant.

Linnæus remarks, that the *ſtem* is proſtrate, ſcarcely a finger's length. *Leaves* cordate, toothed, ſhining. *Calyx* coloured, as is the corolla. And Mr. Woodward, that the *raceme* is generally one, but that ſometimes there are two or three. *Leaves* of a yellower green: and the plant ſometimes ſix inches high. It differs from the foregoing, according to Haller and Krocker, in having a decumbent ſtem, more tender and ſmooth, leſs, and ſcarcely ever more than a ſpan in height; leaves gloſſy, more deeply cut, more evidently cordate, and notched at the petiole; the calyx redder; and the racemes ſimple. The whole plant ſeems to be ſmooth, ſmaller, and of a more delicate texture than the common ſpecies, ſeldom branching, the ſtem uſually reclining towards the bottom. Linnæus allows it only a ſingle raceme, others give it two or three, and even five. Haller affirms that it has even more than the common ſort.

In rocky woods in Lapland, Sweden, Denmark, Switzerland, where I gathered it on mount Scheidegg in auguſt. Carniola, Sileſia, Piedmont, &c.—With us about Leeds and Halifax in Yorkſhire, in Lancaſhire, Weſtmoreland, Cumberland and Scotland. Mr. Miller found it growing wild in the wood near the Hague.]

PROPAGATION AND CULTURE.

Theſe plants multiply exceedingly by their creeping roots, and are therefore ſeldom kept in gardens. If the roots be planted in any ſhady moiſt part of a garden, they will increaſe faſt enough without any care.

[CISSUS. See *Cardiaca*.

CISTUS. See *Anthemis, Cardaus, Cuicus.*]

CISSAMPELOS. (*Κισσαμπελος, Diosc. Hederæ Vitis, Vine or Ivy. From* Κισσος *and* Αμπελος.)

*Lin. gen.* n. 1138. *Reich.* n. 1243. *Schreb.* 1555. *Juſſ.* 285. *Brown.* 357. *Swartz obſ.* 1. 10. *f.* 5. Caapeba. *Plum. gen.* t. 29.

Claſſ. 22. 12. Dioecia Monadelphia.

Nat. order of *Sarmentaceæ. Meniſpermi.* Juſſ.

GENERIC CHARACTER.

* *Male.*

CAL. none, unleſs the corolla be called ſo.

COR. *Petals* four, ovate, flat, expanded.

[a] Curtis, With. Linn. Scop. Hall. Lightf. Pollich, Relh.

[b] Haller, Necker, Krocker.

*Nectary* the membranaceous diſk of the flower, wheel-ſhaped.

STAM. *Filaments* four, very ſmall, coaleſcent. *Anthers* broad, flat.

* *Female.*

CAL. none, except the bracte.

COR. none.

*Nectary* the membranaceous lateral edge of the germ, dilated outwards.

PIST. *Germ* roundiſh. *Styles* three. Stigmas three, erect, acute.

PER. *Berry* globular, one-celled.

SEED ſolitary, wrinkled, ſomewhat compreſſed.

ESSENTIAL CHARACTER.

MALE. *Cal.* four-leaved. *Cor.* none. *Nect.* wheel-ſhaped. *Stam.* four, with connate filaments.

FEM. *Cal.* one-leafed, ligulate-roundiſh. *Cor.* none. *Styles* three. *Berry* one-ſeeded.

SPECIES.

1. Ciſſampelos Pareira.
*Lin. ſpec.* 1473. *Juſſ.* 895. *Reich.* 4. 281. *mat. med.* 218. *Swartz obſ.* 380.
Clematis baccifera, &c. *Plum. amer.* 1. 93. *Sloan. jam.* 1. 200.
Convolvulus braſilianus, fl. octopet., monococcos. *Raii hiſt.* 1331.
Caapeba. *Marcgr. braſ.* 25. *fig.* 26. 1. *Piſ. braſ.* 94. *Plum. gen.* 33.
β. C. ſcandens. *Brown. jam.* 357.
Caapeba fol. orbiculari umbilicato & tomentoſo. *Plum. gen.* 33.
*Leaves peltate, cordate, emarginate and entire.*
2. Ciſſampelos Caapeba.
*Lin. ſpec.* 1473. *Reich.* 4. 281.
Caapeba fol. orb. non umbil. *Plum. gen.* 33. *ic.* 67. *f.* 2.
*Leaves petioled at the baſe, entire.*
3. Ciſſampelos ſmilacina. *Smilax-leaved Ciſſampelos.*
*Lin. ſpec.* 1473. *Reich.* 4. 282.
Smilax lenis, fol. anguloſo hederaceo. *Cateſb. car.* 1. *t.* 51.
*Leaves cordate, acute, angular.*
4. Ciſſampelos fruticoſa.
*Lin. ſyſt.* 895. *ſuppl.* 432.
*Stem erect, ſhrubby, leaves ovate, petioled, entire.*
5. Ciſſampelos capenſis.
*Lin. ſyſt.* 895. *ſuppl.* 432.
*Stem twining, leaves ovate, obtuſe, petioled, entire.*

DESCRIPTIONS, *&c.*

1. Stem climbing and twining from ten to fifteen feet in height, lax, round, ſtriated, ſmooth or hirſute. Leaves ſubpeltate, cordate-roundiſh, tomentoſe: petioles round, reflex, of a middling length. Racemes compound, axillary, dioecious. Males ſubdivided, many-flowered; flowers numerous, heaped, duſky-yellow, minute. Calyx four-leaved: leaflets lanceolate, obtuſe, concave, ſpreading, coloured. Corolla none. Nectary the diſk of the flower, ſmaller than the calyx, entire, a little concave, coloured. Filament ſingle, very ſhort, in the middle of the nectary: anther roundiſh, capitate, the margin four-parted (but not four anthers), the inciſures polliniferous. Female racemes more ſimple; with five or ſix crowded peduncles, which are one-flowered; flowers extremely minute, yellow. Bractes petioled, roundiſh, thick, one under each pedicel. Calyx one-leafed: the lacinia lateral, ovate, attenuated at the baſe, flattened to the germ at bottom. Corolla a ſingle petal, within the lacinia of the calyx, and only half the ſize of it, lateral, ovate, obtuſe, convex, attenuated at the baſe, deciduous. Germ obliquely flattened to the pedicel, roundiſh, hirſute. Style ſubulate, erect. Stigma trifid, ſpreading. The fruit is a roundiſh, compreſſed, ſcarlet drupe; containing a ſingle nut, or very hard ſeed, compreſſed, triply echinate-wrinkled at the edge, two-celled. Cotyledons ovate.

In mountain coppices it is ſmooth, with cordate entire leaves, hoary underneath. In champaign calcareous ſituations it is hirſute, with cordate-roundiſh

Pedunckles axillary, solitary, longer than the leaves, smooth, trichotomous; the branchlets three-flowered: the flowers pedicelled. Native of America *.

13. Branches tomentose, hoary. Leaves petioled, five, six or seven: leaflets also petioled, three or four inches long, unequal, attenuated, unequally serrate, but with the point quite entire, on the upper surface slightly villose, beneath villose-tomentose, hoary, nerved. Petioles tomentose, hoary, bifid: the lateral partial ones branched, the middle one undivided and one-leafed. Cymes dichotomous, five or six times divided, hoary. Flowers small. Calyx obscurely four-toothed, minute. Native of the East-Indies *.

14. This is a farmentose scandent shrub. Branches pubescent. Tendrils opposite to the leaves bifid. Leaves alternate, petioled, compoled of a pair, a ternate, and a single leaflet larger than the reft, a fecond time petioled: leaflets ovate-lanceolate, acuminate, unequally serrate, sparsely hilpid on the upper, but more so on the lower surface; the nerves towards the edges more hilpid on both sides. Panicles fastigiate, brachiate, pedunckled, opposite to the leaves. Flowers small. Koenig sent it from Calcutta *.

15. Stem shrubby, twining, long, branched. Leaves opposite, smooth. Flowers white, in compound terminating umbels. Corolla bell-shaped, four-cleft, woolly within. Calyx truncate, surrounding the berry.

Native of China, about Canton *.]

PROPAGATION AND CULTURE.

The plants are preserved in some of the European gardens, more for the sake of variety, than for use or beauty, as they rarely produce either fruit or flowers in moderate climates. They are propagated either by laying their flexible branches down in pots of earth, where they will put out roots in four or five months, or by planting cuttings in pots filled with light earth, which should be plunged into a moderate hot-bed of tanners bark, covering the pots closely with hand-glasses to exclude the outer air: the cuttings must be frequently refreshed with water, but not too much given at each time. When these or the layers are well rooted, they should be carefully taken up, and each planted in a small pot filled with light earth, and plunged into the hot-bed of tan, where they should constantly remain, being too tender to thrive in England, but with this care. Therefore they should be shifted into larger pots when it is necessary, and their branches must be supported with flakes, to prevent them from trailing over the neighbouring plants; and in warm weather the plants should have free air admitted to them daily. With this treatment they will thrive very well.

CISTOINES. See *Malvernia*.

CISTUS. (Κίστος, *Dioſc.* Derivation very uncertain: written κίσθος, κίσθος & κίσσαρος, and said to be named from the youth Cistus, the fable concerning whom may be seen in Caſſianus Baſſus. Others derive it from κὶς, κὶσ a worm or weevil. Mr. Miller says it is so called, because the seed is inclosed in a *Cista* or capsule.) *Rock-roſe. Gum Cistus.*

*Linn. gen. n.* 673. *Reich. n.* 728. *Schreb.* 913. *Gærtn. t.* 76. *Juſſ.* 294. *Tournef. t.* 136. *Rait meth.* 109. Helianthemum *Tourn. t.* 128. *Juſſ.* 294. *Gærtn. t.* 76. *Rait meth.* 109.

Claſſ. 13. 1. Polyandria Monogynia.

Nat. order of *Rotaceæ*. *Ciſti* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* five-leaved, permanent: *leaflets* roundiſh, concave; of which two alternate ones are lower and ſmaller.

COR. *Petals* five, roundiſh, flat, ſpreading, very large.

STAM. *Filaments* numerous, capillary, ſhorter than the corolla. *Anthers* roundiſh, ſmall.

PIST. *Germ* roundiſh. *Style* ſimple, the length of the ſtamens. *Stigma* flat, orbiculate.

PER. *Capſule* roundiſh, covered with the calyx.

SEEDS numerous, roundiſh, ſmall.

OBS. Helianthemum T. *has a one-celled, three-valved capſule.*—Ciſtus T. *has a five or ten-celled capſule.*

ESSENTIAL CHARACTER.

*Cor.* five-petalled. *Cal.* five-leaved: with two of the leaflets ſmaller. *Capſule.*

SPECIES.

* *Without ſtipules, ſhrubby.*

[1. Ciſtus capenſis. *Cape Ciſtus.*

*Lin. ſpec.* 736. *Reich.* 2. 592. *Vahl. ſymb.* 3. 68. *Leaves ovate-lanceolate petioled three-nerved toothletted naked on both ſides.*]

2. Ciſtus villoſus. *Hairy Rock-roſe* or *ſhrubby Ciſtus.*

*Lin. ſpec.* 736. 2. *Juſſ.* 296. *Reich.* 2. 590.

C. mas. *Daleeb. hiſt.* 222.—fol. rotundo hirſutiſſimo. *Bauh. pin.* 464. *Rait hiſt.* 1007.—major, fol. rotundiore. *Bauh. hiſt.* 2. 2. *Duham. arb.* 1. 167. *t.* 64.

*Leaves ovate petioled rough with hairs.*

3. Ciſtus populifolius. *Poplar-leaved Ciſtus*, or *Rock-roſe.*

*Lin. ſpec.* 736. *Juſſ.* 296. *Reich.* 2. 591. *hort. cliff.* 205. 1.

C. Ledon, fol. populi nigræ, major. *Bauh. pin.* 467. *Rait hiſt.* 1009. *Park.* 663. 2. 664. *f.* 2. *Bauh. hiſt.* 2. 9. *f.* 1.

Ledum latifolium 2. majus. *Cluſ. hiſt.* 1. 78. *Ger.* 1103. 2. *emac.* 1286. 2.

β. C. L., fol. populi nigræ, minor. *Bauh. pin.* 467. *Rait hiſt.* 1009. *Bauh. hiſt.* 2. 9. *f.* 2.

L. latif. 2. minus. *Cluſ. hiſt.* 1. 78.

L. populnea fronde minor. *Park.* 663. 3. 664. *f.* 4.

L. populea fronde. *Ger.* 1103. 3. *emac.* 1286. 3.

*Leaves cordate even acuminate petioled.*

4. Ciſtus laurifolius. *Bay-leaved Gum-Ciſtus.*

*Lin. ſpec.* 736. *Juſſ.* 296. *Reich.* 2. 591.

Ciſtus Ledon, fol. laurinis. *Bauh. pin.* 467. *Rait hiſt.* 1009.

Ledon 1. latifolium. *Cluſ. hiſt.* 1. 77.

C. L. latifolium. *Park.* 662. 1.

*Leaves oblong-ovate petioled three-nerved the upper ſurface ſmooth; petioles connate at the baſe.*

5. Ciſtus ladaniferus. *Spaniſh Gum-Ciſtus.*

*Lin. ſpec.* 737. *Juſſ.* 297. *Reich.* 2. 591. *hort. cliff.* 205. 2. *Curt. magaz.* 7. 112.

C. ladanifera hiſpanica incana. *Bauh. pin.* 467. *Rait hiſt.* 1009.

C. L. 1. anguſtifolium. *Cluſ. hiſt.* 1. 77. *Ger.* 1103. 1. *emac.* 1286. 1. *Park. theat.* 663. *f.* 1. *parad.* 422.

β. C. flore macula nigricante notato. *Bauh. hiſt.* 2. 8. *Comm. hort.* 1. 39. *t.* 20.

C. falcifolius. *Mill. dict. n.* 14.

*Leaves lanceolate even on the upper ſurface, petioles united at the baſe and ſheathing.*

6. Ciſtus monſpelienſis. *Montpelier Gum-Ciſtus.*

*Lin. ſpec.* 737. *Juſſ.* 297. *Reich.* 2. 592. *hort. cliff.* 205. 3. *Gærtn. fruct.* 1. 371. *Villars dauph.* 3. 692.

C. ladanifera monſpelienſium. *Bauh. pin.* 467. *Rait hiſt.* 1010. *Bauh. hiſt.* 10. *f.* 2.

Ledum. *Daleeb. hiſt.* 230.

β. C. L. fol. oleæ, ſed anguſtioribus. *Bauh. pin.* 467.

C. oleæfolius. *Mill. dict. n.* 10.

Ledon 5. *Cluſ. hiſt.* 1. 79. *Ger.* 1104. 5. *emac.* 1287. 5. *Park.* 665. *f.* 7.

*Leaves linear-lanceolate ſeſſile villoſe on both ſides three-nerved.*

7. Ciſtus ſalvifolius. *Sage-leaved Ciſtus.*

*Lin. ſpec.* 738. *Juſſ.* 297. *Reich.* 2. 592. *hort. cliff.* 205. 5. *Step. cent. n.* 643. *Holl. beſc. n.* 1031. *Allion. pedem. n.* 1655. *Villars dauph.* 3. 692.

C. fœmina. *Cluſ. hiſt.* 1. 70.—fol. ſalviæ. *Bauh. pin.* 464. *Rait hiſt.* 1008.—monſpeliaca fl. albo, & hiſpanica luteo. *Bauh. hiſt.* 2. 4. *f.* 2.

*Leaves ovate petioled hirſute on both ſides.*

8. Ciſtus incanus. *Hoary Rock-roſe*, or *Roſe-Ciſtus.*

*Lin. ſpec.* 737. *Juſſ.* 297. *Reich.* 2. 592. *hort. cliff.* 205. 4. *Curt. mag.* 1. 43.

C. mas anguſtifolius. *Bauh. pin.* 464. *Rait hiſt.* 1007. *Ger.* 1093. 1. *emac.* 1275. 1. *Park.* 658. *f.* 1.

C. mas

* Vahl. † Jacq. ‡ Retz. § Loureiro.

C. mas 2. *Clus. hist.* 1. 69.—fol. longiore. *Baub. hist.* 2. 2. *f.* 2.
*Leaves spatulate tomentose wrinkled; the lower connate at the base and sheathing.*

9. Cistus creticus. *Cretan ladaniferous Cistus.*
*Lin. spec.* 738. *syst.* 497. *Reich.* 2. 593. *mat. med.* 137. *Jacqu. collect.* 1. 80. *Woodv. med. bot.* 249. *t.* 91.
C. ladanifera cretica. *Tourn. cor.* 19. *itin.* 1. 30. *Buxb. cent.* 3. 34. *t.* 64. *f.* 1. *Park.*
C. Ledon cretenſe. *Baub. pin.* 467. *Raii hiſt.* 1010.
Ladanum creticum. *Alp. exot.* 89. *t.* 88.
*Leaves spatulate-ovate petioled nerveleſs rugged, calyxes lanceolate.*

10. Cistus albidus. *White-leaved Cistus.*
*Lin. spec.* 737. *syst.* 497. *Reich.* 2. 593. *mant.* 403. *Gouan. monsp.* 225. *Villars dauph.* 3. 692.
C. mas. 1. *Clus. hist.* 1. 68.—fol. oblongo incano. *Baub. pin.* 464. *Raii hiſt.* 1007.—4. fol. obl. albido. *Bauh. hiſt.* 2. *p.* 3.—cum hypociſtide. *Ger.* 1093. *f.* 2. *emac.* 1275. *f.* 2.—vulgaris. *Park.* 658.
*Leaves ovate-lanceolate tomentose hoary ſeſſile moſtly three-nerved.*

11. Cistus criſpus. *Curled-leaved Cistus.*
*Lin. spec.* 738. *Reich.* 2. 593. *hort. cliff.* 206. *n.* 7.
C. mas. 5. *Clus. hiſt.* 1. 69.—fol. chamædryos. *Baub. pin.* 464. *Raii hiſt.* 1008.—fol. criſpis. *Bauh. hiſt.* 2. 3. *f.* 1. *p.* 4.
C. ladaniſera. *Blackw. t.* 197.
*Leaves lanceolate pubeſcent three-nerved waved.*

12. Cistus halimifolius. *Sea Purſlane-leaved Cistus.*
*Lin. spec.* 738. *syst.* 497. *Reich.* 2. 594. *hort. cliff.* 205. 6. *Vahl symb.* 1. 38. *Clus. hiſt.* 1. 71. 1. *Barrel. ic.* 287.
C. femina, portulacæ marinæ fol. latiore obtuſo. *Baub. pin.* 465.—fol. halimi, major. *Park.* 660. *Raii hiſt.* 1011.—fol. halimi. *Ger.* 1095. *f.* 7. *emac.* 1276. *f.* 7.—fl. luteo. *Bauh. hiſt.* 2. 5. *f.* 2.
β. C. fem. port. mar., fol. anguſtiore mucronato. *Baub. pin.* 465.—fol. halimi minor. *Park.* 661. *Raii hiſt.* 1012.—fol. hal. 2. *Clus. hiſt.* 1. 71.—fol. lavandulæ. *Ger.* 1095. 8. *emac.* 1277. 8.—halimi longiore incano. *Baub. hiſt.* 2. 5. *f.* 3.
C. longifolius. *Mill. dict. n.* 18.

γ. C. fruticoſus erectus, fol. oppoſitis ſeſſilibus utrinque incanis. *Mill. fig. t.* 290.
*Leaves lanceolate hoary, peduncles wand-like.*

[13. Cistus libanotis. *Rosemary-leaved Cistus.*
*Lin. spec.* 739. *syst.* 497. *Reich.* 2. 594. *Barr. ic.* 294.
C. Ledon anguſtiis fol. *Baub. pin.* 467. *Raii hiſt.* 1010.
C. L. 6. minoribus anguſtioribuſque fol. *Clus. hiſt.* 1. 79. *Baub. hiſt.* 2. 11. *f.* 1.
*Leaves linear revolute, flowers umbelled, yellow.*]
** *Without ſtipules, underſhrubby.*

14. Cistus umbellatus. *Umbelled Cistus.*
*Lin. spec.* 739. *Reich.* 2. 595.
Helianthemum umbellatum. *Mill. dict. n.* 5.
C. Ledon fol. thymi. *Baub. pin.* 467. *Raii hiſt.* 1011. *Baub. hiſt.* 2. 12. *f.* 3.
Ledon 10. *Clus. hiſt.* 1. 81. *Ger.* 1105. *t.* 9. *emac.* 1288. *t.* 9.
*Procumbent; leaves oppoſite; flowers umbelled.*

[15. Cistus lævipes. *Cluſter-leaved Cistus.*
*Lin. spec.* 739. *syst.* 497. *Reich.* 2. 595. *amæn.* 4. 275. *Jacqu. hort.* 2. *t.* 158. *Ger. prov.* 394. *t.* 14. *Pluk. alm.* 107. *t.* 84. *f.* 6. *Barr. ic.* 290. *Raii hiſt.* 1016. (Chamæciſtus maſſil.)
*Ascending; leaves alternate ſoſicled ſiliform ſmooth; peduncles racemed.*

16. Cistus calycinus.
*Lin. syst.* 498. *Reich.* 2. 595. *mant.* 565.
Chamæciſtus ericæ fol. luteus. *Baub. pin.* 466. *Pluk. alm. t.* 83. *f.* 6. *Raii hiſt.* 1015. 10.
*Erect; leaves linear; peduncles one-flowered; calyxes three-leaved.*

17. Cistus ſyriacus. *Syrian Cistus.*
*Lin. syst.* 498. *Jacqu. collect.* 1. 98.
*Erect; leaves lanceolate, revolute; flowers racemed.*]

18. Cistus Fumana. *Heath-leaved Cistus.*
*Lin. spec.* 740. *syst.* 498. *Reich.* 2. 595. *fl. ſuec. n.* 474. *mant.* 403. *Jacqu. auſtr.* 3. *t.* 252. *Scop. carn. n.* 644. *Hall. helv. n.* 1032. *Villars dauph.* 3. 698.
Chamæciſtus 6. *Clus. hiſt.* 1. 75.
β. Ch. ericæ fol. luteus humilior. *Baub. pin.* 466. *n.* 12.
Helianthemum. *Baub. hiſt.* 2. 18. *f.* 3.—H. Fumana. *Mill. dict. n.* 6.
*Procumbent; leaves alternate linear rugged about the edge; peduncles one-flowered.*

[19. Cistus canus. *Myrtle-leaved dwarf Cistus.*
*Lin. spec.* 740. *syst.* 498. *Reich.* 2. 596. *mant.* 403. *Jacqu. auſtr.* 3. *t.* 277. *Scop. carn. n.* 647. *ann.* 2. 53. *Crantz. auſtr.* 103. *Allion. pedem. t.* 45. *f.* 3.
Chamæciſtus fol. myrti minoris incanis. *Baub. pin.* 466. *Bauh. hiſt.* 2. 18. *f.* 2. *Raii hiſt.* 1015.
Ch. 3. *Clus. hiſt.* 1. 74.
C. humilis latifolius. *Ger.* 1095. *f.* 10. *emac.* 1278. *f.* 10.
β. Helianthemum alpinum ſerpilli fol. nigricante & hirſuto. *Segu. ver.* 3. 195. *t.* 6. *f.* 2.
*Procumbent; leaves oppoſite obovate villoſe tomentose underneath; flowers ſubumbelled.*

20. Cistus italicus. *Italian Cistus.*
*Lin. spec.* 740. *syst.* 498. *Reich.* 2. 597. *Allion. pedem. n.* 1665. *Barr. ic. t.* 366.
*Leaves oppoſite bifpid; lower ovate, upper lanceolate; branches ſpreading.*]

21. Cistus marifolius. *Marum-leaved Cistus.*
*Lin. spec.* 741. *Reich.* 2. 597. *Hall. helv. n.* 1035. *Villars dauph.* 3. 696.
C. tomentoſus. *Scop. carn. n.* 646. *t.* 24?
Chamæciſtus. *Barr. ic. t.* 441.
H. luſitanicum. *Mill. dict. n.* 16?
*Leaves oppoſite oblong petioled flat hoary underneath.*

22. Cistus roſeus. *Roſe-flowered Cistus.*
*Lin. syst.* 498. *Jacqu. hort.* 3. *t.* 65. *Allion. pedem. n.* 1675. *t.* 45. *f.* 4.
H. roſeum. *Mill. dict. n.* 17.
*Procumbent; leaves oppoſite oblong, rolled back at the edge, ſomewhat hoary on both ſides.*

23. Cistus anglicus. *Engliſh Cistus.*
*Lin. syst.* 498. *Reich.* 2. 597. *mant.* 245. *With. arr.* 557.
C. hirſutus. *Hudſ. angl.* 232.
C. helianthemus argenteus, fol. latiore, fl. luteo. *Pluk. phyt. t.* 23. *f.* 5.
Helianthemum. *Baub. hiſt.* 2. 18. & 19. *f.* 1. *Raii hiſt.* 1015. 7. *ſyn.* 342. 3. *Segu. ver.* 3. 196. *Dill. elth. t.* 145. *f.* 173.
H. marifolium. *Mill. dict. n.* 24.
*Procumbent; leaves oppoſite oblong revolute hairy, flowers racemed.*

[24. Cistus oelandicus.
*Lin. spec.* 741. *syst.* 498. *Reich.* 2. 598. *fl. ſuec. n.* 473. *Jacqu. auſtr.* 4. *t.* 399. *Ger. prov.* 396. *n.* 10. *Hall. helv. n.* 1034. *Gouan. monſp.* 263. *illuſtr.* 32. *Villars dauph.* 3. 697.
C. alpeſtris. *Jacqu. vind.* 248. *Scop. carn. n.* 645. *t.* 23. *Crantz. auſtr.* 103. *t.* 6. *f.* 1. *Allion. pedem. n.* 1663.
C. helianthemos, fl. parvo luteo. *Baub. hiſt.* 2. 17.
*Procumbent; leaves oppoſite oblong ſmooth on both ſides; petioles ciliate; petals emarginate.*]
*** *Without ſtipules, herbaceous.*

25. Cistus Tuberaria. *Plantain-leaved Cistus.*
*Lin. spec.* 741. *Reich.* 2. 598. *Cavan. hiſp.* 65. *n.* 106. *t.* 97.
C. fol. plantaginis. *Baub. pin.* 465. *Raii hiſt.* 1012.
Helianthemum Tuberaria. *Mill. dict. n.* 10.
H. plant. fol. perenne. *Tourn. inſt.* 250. *Buxb. cent.* 3. 33. *t.* 63.
Tuberaria noſtras & major. *Baub. hiſt.* 2. 12.
*Perennial; root-leaves ovate three-nerved tomentoſe; ſtem-leaves ſmooth lanceolate; the upper alternate.*

26. Ciſtus guttatus. *Annual ſpotted-flowered Ciſtus.*
*Lin. ſpec.* 741. *Reich.* 2. 599. *mant.* 403. *Huſſ. angl.* 232. *With.* 558. *Villars dauph.* 3. 699.
C. fl. pullido, punicante macula inſignite. *Bauh. pin.* 465. *Raii hiſt.* 1012. *ſyn.* 342.
C. annuus fl. maculato. *Ger. emac.* 1281. 19.
C. ann. fl. guttato. *Bauh. hiſt.* 2. 14. *f.* 1. *Park.* 661.
Helianthemum guttatum. *Mill. dict. n.* 18.
H. fl. maculoſo. *Col. ecphr.* 2. 78. *t.* 77.
*Leaves oppoſite lanceolate three-nerved, racemes without bractes.*

[27. Ciſtus canadenſis. *Canadian Ciſtus.*
*Lin. ſpec.* 742. *Reich.* 2. 599.
*All the leaves alternate lanceolate, ſtem aſcending.*]
* * * * *With ſtipules, herbaceous.*

28. Ciſtus ledifolius. *Ledum-leaved Ciſtus.*
*Lin. ſpec.* 742. *ſyſt.* 499. *Reich.* 2. 599. *Bauh. pin.* 465. 12. *Lob. ic.* 2. 118. 2. *Raii hiſt.* 1013. *Park.* 662. 8.
C. annuus longifolius Lobelii. *Ger.* 1098. 18. *emac.* 1280. 18.
C. ann. fol. Ledi, fl. luteo. *Bauh. hiſt.* 2. 14. *f.* 2.
Helianthemum ledifolium. *Mill. dict. n.* 20.
*Erect ſmooth; flowers ſolitary ſubſeſſile oppoſite to a ternate leaf.*

29. Ciſtus ſalicifolius. *Willow-leaved annual Ciſtus.*
*Lin. ſpec.* 742. *ſyſt.* 499. *Reich.* 2. 600. *Huſſ. angl.* 233. *With.* 558. *Bauh. pin.* 465. 10.
C. annuus. *Ger.* 1098. 17. *emac.* 1280. 17. *Raii hiſt.* 1013.—fol. ſalicis. *Park.* 661. 7.
C. annuus 1. *Cluſ. hiſt.* 1. 76. 2.—fol. rotundiore. *Bauh. hiſt.* 2. 13. *f.* 3. *Lob. obſ.* 552. 1. *ic.* 2. 118. 1.
Helianthemum ſalicifolium & fugacium. *Mill. dict. n.* 21. & 19.
*Spreading, villoſe; flowers racemed, erect; pedicels horizontal.*

[30. Ciſtus niloticus.
*Lin. ſyſt.* 499. *Reich.* 2. 600. *mant.* 246.
*Erect, ſubtomentoſe; flowers racemed ſolitary ſeſſile oppoſite-leaved.*]

31. Ciſtus ægyptiacus. *Egyptian Ciſtus.*
*Lin. ſyſt.* 499. *Reich.* 2. 600. *mant.* 404. *Jacqu. obſ.* 3. 17. *t.* 68.
Helianthemum ægyptiacum. *Mill. dict. n.* 23.
*Erect; leaves linear-lanceolate petioled; calyxes inflated, larger than the corolla.*
* * * * *With ſtipules, underſhrubby.*

[32. Ciſtus ſquamatus.
*Lin. ſpec.* 743. *Reich.* 2. 601. *Barr. ic.* 327. *Bocc. muſ.* 2. 76. *t.* 64. *f.* 3.
*Leaves covered with orbiculate ſcales.*

33. Ciſtus Lippii.
*Lin. ſyſt.* 499. *Reich.* 2. 601. *mant.* 245. *Vahl ſymb.* 1. 39. *Forſk. ægypt.* 100.
*Erect; leaves alternate and oppoſite lanceolate, rugged; ſpikes directed one way.*]

34. Ciſtus furreianus. *Small-flowered Ciſtus.*
*Lin. ſpec.* 743. *Reich.* 2. 601. *With.* 558.
C. Helianthemum 3. *Huſſ. angl.* 233.
Helianthemum furreianum. *Mill. dict. n.* 15.
H. vulg. petalis florum peranguſtis. *Raii ſyn.* 341. *Dill. elth. t.* 145. *f.* 174.
*Procumbent; leaves ovate-oblong, ſomewhat hairy; petals lanceolate.*

35. Ciſtus nummularius.
*Lin. ſpec.* 743. *Reich.* 2. 601. *Magn. monſp.* 293. *alt.*
Helianthemum nummularium. *Mill. dict. n.* 12. *Bauh. hiſt.* 2. 20. *f.* 3.
*Lower leaves orbiculate, upper ovate.*

[36. Ciſtus canarienſis. *Canary Ciſtus.*
*Lin. ſyſt.* 499. *Jacqu. miſc.* 2. 339. *icon. rar. t.* 97.
*Procumbent; leaves ſubovate, alternate and oppoſite; racemes erect.*

37. Ciſtus fœtidus.
*Lin. ſyſt.* 499. *Jacqu. miſc.* 2. 341. *icon. rar. t.* 98.
*Procumbent; ſtipules lanceolate; leaves oblong, rugged.*]

38. Ciſtus ſerpyllifolius. *Wild Thyme-leaved Ciſtus.*
*Lin. ſpec.* 743. *Reich.* 2. 602. *Sauv. monſp.* 148.—an alpeſtris. *Allion. pedem. n.* 1663. *Scop. carn. n.* 645. *t.* 23. *ſec n.* 24.
Helianth. ſerpilliſol. *Mill. dict. n.* 8?
Chamæciſtus. *Bauh. pin.* 466. 11. *Bauh. hiſt.* 2. 17. *f.* 2. *Raii hiſt.* 1014. 4.
Chamæciſtus. *Cluſ. hiſt.* 1. 73. 2?
*Leaves oblong; calyxes even.*

[39. Ciſtus glutinoſus. *Clammy Ciſtus.*
*Lin. ſyſt.* 500. *Reich.* 2. 602. *mant.* 246. *Ger. prov.* 394. *n.* 7.
Chamæciſtus. *Barr. ic. t.* 415.
Helianthemum. *Bauh. hiſt.* 2. 19. *f.* 4.
*Leaves linear oppoſite, and alternate; pedunules villoſe, glutinoſe.*

40. Ciſtus thymifolius. *Thyme-leaved Ciſtus.*
*Lin. ſpec.* 743. *Reich.* 2. 602. *Sauv. monſp.* 148. *Villars dauph.* 3. 695.
Chamæciſtus. *Barr. ic.* 444.
*Procumbent; leaves oval-linear, oppoſite, very ſhort, heaped.*]

41. Ciſtus pilоſus. *Hairy Ciſtus.*
*Lin. ſpec.* 744. *ſyſt.* 500. *Reich.* 2. 602. *Sauv. monſp.* 147. *Ger. prov.* 395. *Allion. pedem. n.* 1672. *t.* 45. *f.* 1, 2.
C. hirſutus. *Villars dauph.* 3. 694?
Chamæciſtus. *Bauh. pin.* 466. 5. *Cluſ. hiſt.* 1. 74. 4.
β. C. ſtipulis quaternis, fol. linearі-ovalibus incanis, calycibus tomentoſis. *Sauv. monſ.* 148.
Hel. fl. albo, fol. anguſto hirſuto. *Bauh. hiſt.* 2. 17. *f.* 1.
γ. C. fol. villoſis lanceolatis, ſtip. ſubulatis. *Sauv. monſp.* 148.
H. ſampſuchifolium. *Mill. dict. n.* 7.
H. f. C. humilis, fol. ſampſuci, capitulis valde hirſutis. *Bauh. hiſt.* 2. 20. *f.* 2.
δ. Ch. fol. minoribus & incanis. *Bauh. pin.* 466.
C. omnino candicans, fl. nunc albo nunc pallido. *Bauh. hiſt.* 2. 16. *f.* 2.
*Almoſt upright; leaves linear, with two grooves underneath, hoary; calyxes even.*

[42. Ciſtus racemoſus.
*Lin. ſyſt.* 500. *Reich.* 2. 603. *mant.* 76. *Vahl ſymb.* 1. 39. *Barr. rar. ic.* 293.
*Leaves linear, calyxes racemed, pointing one way, nerved-angular, ſmooth.*

43. Ciſtus anguſtifolius.
*Lin. ſyſt.* 500. *Jacqu. hort.* 3. 29. *t.* 53.
*Diffuſed; leaves lanceolate; calyxes hirſute.*]

44. Ciſtus Helianthemum. *Dwarf Ciſtus, or little Sunflower.*
*Lin. ſpec.* 744. *Reich.* 2. 603. *hort. cliff.* 206. *fl. ſuec. n.* 472. *Huſſ. angl.* 233. *With.* 559. *Curt. lond.* 5. *t.* 36. *Relh. cantab. n.* 389. *Hall. helv. n.* 1033. *Scop. carn. n.* 649. *Pollich pal. n.* 511. *Crantz. austr.* 100. *Fl. dan. t.* 101. *Villars dauph.* 3. 693.
Chamæciſtus vulgaris fl. luteo. *Bauh. pin.* 465. *Lobſ. pruſſ.* 43. *t.* 8. *Raii hiſt.* 1013.
Helianthemum Chamæciſtus. *Mill. dict. n.* 1.
H. vulgare. *Gerin. fruſt.* 1. 371.
H. anglicum album & luteum germanicum. *Ger.* 1100. 2, 3.
H. luteum & album germanicum. *Ger. emac.* 1282. 3. & 1283. 4.
H. vulgare. *Park.* 656. 1.—fl. luteo. *Bauh. hiſt.* 2. 15. 2.
Panax Chironium, ſ. flos ſolis. *Camer. epit.* 501.
*Procumbent; ſtipules lanceolate; leaves oblong, reticulate, ſomewhat hairy.*

[45. Ciſtus mutabilis. *Changeable Ciſtus.*
*Lin. ſyſt.* 500. *Jacqu. miſc.* 2. 340. *icon. rar. t.* 99.
*Procumbent; ſtipules lanceolate; leaves oblong, ſmooth, flat.*]

46. Ciſtus hirtus. *Roſemary-leaved Ciſtus.*
*Lin. ſpec.* 744. *Reich.* 2. 604. *Gron. orient.* 169. *Sauv. monſ.* 148.
C. roſmarinifolius. *Allion. pedem. n.* 1676.
C. Ledon fol. roriſmarini ſubtus incani. *Bauh. pin.* 467. *Raii hiſt.* 1010. 10. *Bauh. hiſt.* 2. 11. & 12. *f.* 1.

Ledon 8. *Cluſ. hiſt.* 1. 8.
Helianthemum hirtum. *Mill. dict. n.* 14.
*Leaves ovate; calyxes hiſpid.*
47. Ciſtus apenninus. *Apennine Ciſtus.*
*Lin. ſpec.* 744. *fiſt.* 500. *Reich.* 2. 604.
Helianthemum germanicum & apenninum. *Mill. dict. n.* 2 & 4.
H. album germanicum. *Tabern. ic.* 1062.
H. ſaxatile, fol. & calyc. incanis oblongis, flor. albis. *Mentz. pug.* 8. *f.* 3. *Dill. elth.* 176.
*Spreading; leaves lanceolate, rough with hairs.*
48. Ciſtus polifolius. *Mountain Ciſtus.*
*Lin. ſpec.* 745. *Reich.* 2. 604. *mant.* 404. *Hudſ. angl.* 234. *Wilb.* 560. *Hall. helv. n.* 1036. *Villars dauph.* 3. 695. *Pluk. alm.* t. 23. *f.* 6.
Chamæciſtus montanus Polii folio. *Raii ſyn.* 342.
Helianthemum polifolium. *Mill. dict. n.* 11.
H. montanum, polii folio incano, fl. candido. *Dill. elth.* 175. *t.* 145. *f.* 172.
*Procumbent; leaves oblong-ovate, hoary; calyxes even; petals ſerrate.*
[49. Ciſtus arabicus. *Arabian Ciſtus.*
*Lin. ſyſt.* 500. *Reich.* 2. 605. *amæn.* 4. 275. *cent.* 39. *Vahl ſymb.* 2. 62. *t.* 35.
*Procumbent; leaves linear, thoſe on the peduncles alternate, thoſe on the branchlets crowded.*
*Species not in Syſtema Vegetabilium.*
50. Ciſtus medius.
*Allion. pedem. n.* 1657.
C. foemina, fol. ſalviæ, fl. ochræ colore. *Tourn. inſt.* 260.
*Leaves ovate-lanceolate, wrinkled, petioled, toothleited.*
51. Ciſtus grandiflorus. *Great-flowered Ciſtus.*
*Scop. carn. n.* 648. *t.* 35. *Allion. pedem. n.* 4.
C. Helianthemum C. *Villars dauph.* 3. 693.
Helianthemum alpinum vulgari ſimile, fol. latioribus. *Segu. veron. ſuppl.* 193. *t.* 6. *f.* 1.
*Stipuled, ſuffruticoſe; leaves lanceolate, villoſe on both ſides, acuminate; ſtipules longer than the calyx.]*
52. Ciſtus breviorifolius. *Short-leaved Ciſtus.*
*Mill. dict. n.* 3.
C. mas fol. breviore. *Baub. pin.* 464. *Park.* 659. *Ger. emac.* 1276. 3. *Raii hiſt.* 1007.
C. mas 3. *Cluſ. hiſt.* 69. *Baub. hiſt.* 2. 3.
*Shrubby, without ſtipules; leaves ovate-lanceolate, connate, hirſute, wrinkled; peduncles longer.*
53. Ciſtus luſitanicus.
*Mill. dict. n.* 4.
C. mas lutit., fol. ampliſſimo incano. *Tourn. inſt.* 259.
*Shrubby, without ſtipules; leaves ovate, obtuſe, villoſe, nerved and wrinkled underneath; flowers larger.*
54. Ciſtus hiſpanicus.
*Mill. dict. n.* 5.
*Shrubby, without ſtipules, villoſe; leaves lanceolate, green connate; flowers ſeſſile; calyxes acute.*
55. Ciſtus cordifolius.
*Mill. dict. n.* 12.
*Shrubby, without ſtipules; leaves oblong-cordate, ſmooth; petioles longer.*
56. Ciſtus ſalviculatus.
H. ſalvic. *Mill. dict. n.* 22.
*Leaves in bundles.*
[57. Ciſtus vaginatus. *Oblong-leaved Ciſtus.*
*Ait. hort. kew.* 2. 232.
*Arboreſcent; without ſtipules; leaves oblong, hairy underneath, netted-wrinkled; petioles united at the baſe, ſheathing, furrowed.*
58. Ciſtus laxus. *Broad waved-leaved Ciſtus.*
*Ait. hort. kew.* 2. 233.
Ledon 4. *Cluſ. hiſt.* 1. 78. *fig.*
*Arboreſcent; without ſtipules; leaves ovate-lanceolate, waved, toothletted, ſmooth, the upper rough with hairs; calycine leaflets roundiſh-cordate.*
59. Ciſtus ſcabroſus. *Rough Ciſtus.*
*Ait. hort. kew.* 2. 236.
*Underſhrubby; without ſtipules; leaves oppoſite, ovate, hairy and rugged, three-nerved; calyxes three-leaved.*
60. Ciſtus ſericeus.
*Vahl ſymb.* 1. 37. *Barrel. ic.* 1315.
*Arboreſcent, without ſtipules, leaves ovate, toothleſs, three-nerved, the lower petioled, the uppermoſt ſeſſile, peduncles rough with hairs.*
61. Ciſtus hybridus.
*Vahl ſymb.* 1. 37.
*Arboreſcent, without ſtipules, leaves ovate, petioled, hoary, branches ſcaly, peduncles elongated, rough with hairs.*
62. Ciſtus elongatus.
*Vahl ſymb.* 1. 38.
*Arboreſcent, without ſtipules, leaves lanceolate, hoary, peduncle elongated, two-leaved, that and the racemed calyxes birſute.*
63. Ciſtus alternifolius.
*Vahl ſymb.* 1. 38.
*Suffruticoſe, without ſtipules, leaves alternate, peduncles lateral and terminating, ſolitary, one-flowered.]*
64. Ciſtus lavandulifolius. *Lavender-leaved Ciſtus.*
*Vahl ſymb.* 1. 39. *Cluſ. hiſt.* 1. 72. *Baub. hiſt.* 2. 5. *Barrel. ic.* 288.
C. folio ſpicæ. *Baub. pin.* 465.
Helianthemum lavendulæfolium. *Mill. dict. n.* 13.
*Suffruticoſe, ſtipuled, leaves lanceolate-linear, tomentoſe, calyxes racemed tomentoſe, pointing one way, pendulous.*
[65. Ciſtus lanceolatus.
*Vahl ſymb.* 2. 62.
*Suffruticoſe, without ſtipules, leaves lanceolate, three-nerved, hairy.*
66. Ciſtus ocymoides.
*Vahl ſymb.* 3. 68. *Lamarck encycl.*
C. ſampſucifolius. *Crwan. hiſp.* 65. *n.* 105. *t.* 96.
C. folio ſampſuci. *Cluſ. hiſt.* 1. 72. *Baub. hiſt.* 2. 6.
*Shrubby, without ſtipules; leaves ovoiate, three-nerved, thoſe of the branchlets hoary on both ſides, reflex at the tip, calyxes racemed, both they and the peduncles quite ſmooth.*

DESCRIPTIONS, *&c.*

The hiſtory of this genus is extremely obſcure, on account of the abundance of varieties which occur in it. The ſpecies may be much elucidated, ſays Linneus, if botaniſts will attend to the following circumſtances, in their native places of growth. 1. Whether the trunk be ſhrubby, underſhrubby, annual or perennial. 2. Whether the ſtem be erect or decumbent. 3. Whether the leaves be oppoſite or alternate, and what is their form. 4. Whether there be two ſtipules or none. 5. Whether the peduncle be one-flowered or many-flowered; naked, or with a bractæ. 6. What is the form of the petals. 7. Whether the capſules have five or three valves. 8. Whether the calyx be equal or unequal.

The following ſpecies are ſhrubby; from 1 to 13, 50, 52 to 55, 56, 57, 58, 60, 61, 62: theſe are underſhrubs; from 14 to 24, 32 to 49, 51, 59, 63 to 66: a few others are herbaceous, from 25 to 31.

The following grow erect; from 2 to 13, 16, 17, 20, 21, 26, 28, 31, 32, 33, 41, 46, 62, 63, 66: and theſe are decumbent; 14, 15, 18, 22, 23, 24, 34 to 37, 44, 45, 47, 48, 49, 59.

Moſt of the ſpecies have the leaves oppoſite; in ſome they are alternate, as in 15, 17, 18, 27, 39: but ſome ſpecies have the lower leaves oppoſite, and the upper ones alternate.

The following ſpecies have ſtipules; 28 to 49, 51, 64, 65: the others have none; 1 to 27, 50, 52 to 55, 57 to 63, 66.

Species 3, 4, 6, 26, 42, 64, 65 have naked peduncles: in 23, 30, 36, 41, 43, 48, 49, 62, 63, 66, they are bracted.

The corolla is White in the following ſpecies; 3 to 7, 35, 37, 41, 46 to 48, 55, 66. Purple in theſe; 2, 8 to 11, 22, 45, 52 to 54, 60, 61. Yellow in the reſt; 1, 12 to 21, 23 to 34, 36 to 40, 42 to 45, 50, 51, 56, 59, 62, 63, 64, 65. But ſome of theſe vary with white and even roſe-coloured corollas, as 44 and 45.

They are natives of Europe, particularly the ſouthern kingdoms, except 1, 9, 27, 30, 31, 49, 56, 57, 63 and 65.

The

The form of the leaves in the greater part is ovate or lanceolate, or some modification of these two forms. They are cordate in the 3d. Elliptic in the 30th. Fascicled in the 56th. Filiform in the 15th. Lanceolate in 5, 11, 17, 19, 26, 27, 33, 43, 47, 49, 51, 54, 62, 65. Lanceolate-linear in 42 and 64. Linear in 13, 14, 16, 18, 39, 41. Linear-lanceolate in 6 and 31. Oblong in 21 to 24, 37, 38, 45, 57, 63. Oblong-cordate in 55. Oblong-ovate in 4, 44, 48. Obovate in 19 and 66. Oval-lanceolate in 32. Oval-linear in 40. Ovate in 2, 7, 12, 20, 25, 35, 46, 53, 59, 60, 61. Subovate in 36. Ovate-lanceolate in 1, 10, 50, 52, 58. Ovate-oblong in 34. Spatulate in 8. Spatulate-ovate in 9. And ternate in 28.

But the principal difference in these plants is in the Capsule, which in some is five or ten-celled, with as many valves; in others one-celled and three-valved. Hence this great genus might very commodiously be divided into two, as Tournefort, Miller, Jussieu, Gærtner and others have done, at least in the artificial arrangement, for undoubtedly they all constitute one natural genus. They may be distinguished thus. *Cistus* or Rock-rose, has a five or ten-celled capsule, with as many valves. Seeds fixed to the axis. Embryo spiral. These are shrubs or undershrubs; the leaves opposite and naked; the flowers in umbels, with unequal calycine leaflets, and the corolla either purple or white, commonly large and specious.

*Helianthemum*, or Dwarf Sunflower, has a one-celled three-valved capsule, with the seeds fixed to the valves. Embryo uncinate-inflected. These are suffruticose or herbaceous; the leaves opposite, or sometimes alternate, stipuled or naked; the flowers in spikes or racemes, with two of the calycine leaflets minute, and a corolla commonly yellow, seldom purple or white, smaller than that of the Cistus, very deciduous in both.

1. Branches round, purplish, having hairs thinly scattered over them. Leaves three inches long, remote, the upper ones sessile, but not connate, the lower attenuated into a very short petiole; they are acute, imperfectly three-nerved, the nerves towards the middle evanescent, smooth on both sides, toothletted and ciliate, with long hairs, especially the uppermost. Petioles distinct. Peduncles terminating, trifid; the partial ones three-flowered. Leaflets of the calyx cordate, acuminate, hirsute, toothletted, ciliate, the younger ones extremely hirsute. Corolla yellow [a].

Linneus remarks, that this differs from the other species in the toothlets of the leaves. It is a native of the Cape of Good Hope.]

2. This has a strong woody stem, covered with a rough bark, and three or four feet high, dividing into many branches, so as to form a large bushy head. Leaves opposite, sessile, with several smaller leaves of the same form from the same joint. The flowers are produced at the ends of the branches, four or five together, almost in form of an umbel, but it rarely happens that more than one is open at the same time. The petals are large, purple, and spread open like a rose; they are but of short duration, generally falling off the same day they expand; but there is a succession of fresh flowers every day for a considerable time, in may and june; generally again in september and october, if the autumn be favourable, and even in the winter if the plants be protected from frost.

[According to the observation of Linneus, the leaves are wrinkled, green on both sides, and pubescent. The peduncles one-flowered, with a bent joint [b].

Native of Italy and Spain.

In Linneus's species and Miller's dictionary it is named *pilosus*.]

3. This has a stiff slender woody stem, six or seven feet high, sending out many branches the whole length. [These branches and the leaves are hairy; the calyxes also are very hairy: but the branches and leaves, when farther advanced, become naked.] The leaves are large, of a light green colour, sessile, with many nerves. The flowers are produced at the ends of the branches, on naked peduncles. The corolla is white, and soon drops off. [Linneus adds, that the petals are tinged with purple on their edges; that the stamens are yellow; and that the calyxes, before they unfold, appear three-cornered [c].

Native of Portugal. Cultivated in 1656, by John Tradescant, junior. It flowers in june and july [d].]

4. This rises with a strong woody stem to the height of five or six feet, sending out many erect hairy branches. Leaves lanceolate, acute, thick, dark green above, and white beneath, very glutinous in warm weather. [According to Linneus, they are wrinkled, green on both sides, and scarce visibly hairy: the petioles become purple at the base [e].] The flowers are produced at the ends of the branches upon long naked peduncles, branching on their sides into smaller ones, each sustaining one large white flower, with a hairy calyx. It flowers in june and july.

[Native of Spain. Cultivated in 1752, by Miller [f].]

5. Height five or six feet, with a strong woody stem, sending out many hairy branches. Leaves smooth on their upper side, but veined on their under, on short foot-stalks which join at their base, where they form a sort of sheath to the branch. [Corolla white, the size of the officinal Poppy. The germ has ten swellings: stigma sessile, without any style. [g] Native of the hills of Spain and Portugal.

Cultivated in 1656, by John Tradescant, junr. [h]

Mr. Curtis observes, that the name *ladaniferus* is not strictly proper, since this is not the plant whence *Ladanum* is produced, although in a warmer climate it affords a similar gum. See n. 9.

β. This, which Miller makes a distinct species, has smooth branches, covered with a reddish-brown bark. The leaves are narrow-lanceolate, whitish on their under side, of a dark green above; having three longitudinal veins. The petals are very large, roundish, white, with a large purple spot at their base. The whole plant exudes a sweet glutinous substance in warm weather, which has a very strong balsamic scent, and perfumes the air to a great distance.

It flowers from june to august.

There is a variety with white flowers, having no purple spots, which is in all other respects the same with this.

6. Stem slender, from three to four feet high, sending out many hairy branches from the bottom upwards. Leaves very dark green, in warm weather covered with a glutinous sweet-scented substance. The peduncles, which come out at the ends of the branches, are long, naked, and sustain many white flowers, rising above each other; their calyxes are bordered, and end in sharp points. It flowers from june to august.

[According to Linneus, the upper leaves are broader at the base, but the rest are linear; they are netted and three-nerved underneath. Raceme on long peduncles, often bifid. Capsule, as Gærtner says, five-celled, five-valved; with four smooth blackish seeds in each cell.

Native of Narbonne, and the kingdom of Valencia.

It was cultivated in 1656, by John Tradescant, junr. [i]

β. The variety, or olive-leaved Rock-rose of Miller, has, according to him, the stem about four feet high, with very hairy, glutinous, erect branches; and long, narrow hairy leaves, ending in points, deep green on both sides, having a deep furrow on

[a] Spec. & syst.
[b] Hort. kew.
[c] Vahl.
[d] Hort. kew.
[e] Linn. syst.
[f] Ibid.
[g] Syst. veget.
[h] Hort. kew.
[i] Syst. veget.

their upper ſide made by the midrib. The flowers are on long peduncles at the ends of the branches, are of a pale ſulphur colour, and have an acute bordered calyx. It flowers at the ſame time with the other.

7. Stem ſlender, ſmooth, covered with a brown bark, never riſing more than three feet high, and ſending out many weak branches ſpreading horizontally. [Leaves obtuſe, without veins, not ſo ſoft as in many other ſpecies. Peduncles lateral, ſolitary, one-flowered, longer than the leaves [a].] Corolla white, and ſomewhat ſmaller than that of the other Rock-roſes. It flowers from june to auguſt.

[Native of Italy, Sicily, Narbonne, Switzerland and Carniola.

Cultivated before 1551, in Sion garden [b].

8. Branches villoſe. Leaves not at all nerved, ending in a point, a little flexuoſe in the diſk, ending at the baſe in coaleſcent ſheathing petioles; or rather they are obovate-ſpatulate: the lower more connate, and in a manner ſheathing. Calyxes hairy, with ſubcordate leaflets. Petals purple, emarginate or obcordate, quite entire, concave. Native of Spain and Narbonne [c]. Cultivated in 1596, by Gerarde [d].

9. Branching, diffuſed, a foot and half high and more. Stem and branches round, and ſomewhat villoſe. Leaves from broad ſtem-claſping, petioled, firſt ſpatulate, then ovate or lanceolate, ſomewhat acute, wrinkled, ſometimes waved, roughiſh, thickiſh, quite entire, viſcid, cloſely ſet on both ſides and round the edge with white hairs of different lengths, ſome ſimple, others branched or headed, ſcarcely viſible to the naked eye. Peduncles one-flowered, terminating the laſt leafy twigs, erect and villoſe. Calyx villoſe, with ovate-acuminate leaflets, nearly equal. Petals roſe-purple, without ſmell, very obſcurely crenate, forming a corolla an inch and half in diameter. The whole of the ſtamens is yellow. Germ hirſute, green. Capſule ovate, obtuſe, brown, hirſute with aſh-coloured hairs, five-celled and five-valved. Seeds ſmooth, ruſous, angular. It flowers copioufly in june and july, and the ſeeds ripen in ſeptember [e]. Native of the Levant.

Cultivated in 1731, by Mr. Miller [f].

The Ciſtus Creticus, or Cretan Ciſtus, is the ſpecies from which the drug called Ladanum is procured. This is a reſin, which is ſecreted from the leaves and other parts of the ſhrub, and is ſcraped off by means of a kind of rake, to which numerous leathern thongs are appended inſtead of teeth. This inſtrument being drawn backwards and forwards over the plant from time to time, collects the reſin. Ladanum is ſeen in different degrees of purity. The beſt is in dark-coloured maſſes of the conſiſtence of a ſoft plaiſter, growing ſtill ſofter on being handled. It is indeed ſubject to many ſophiſtications from the more or leſs careful manner in which it is at firſt collected, and from the fraudulent practices of thoſe through whoſe hands it afterwards paſſes. The chief uſe of Ladanum in modern practice is in fumigations, its fragrant ſmell having made it a conſtant ingredient in ſuch preparations. Sometimes it is uſed in Troches, and in the Paris pharmacopœia there is a pectoral troche in which there is a good quantity of Ladanum, with muſk and amber. In the old German ſhops is kept a tincture of Ladanum which is uſed in female weakneſſes, &c. but is not known with us. It ſhould be obſerved that Ladanum gives out its active matter to ſpirit of wine, and little or nothing to water, from its being entirely reſinous, and conſequently not ſoluble in water.

10. This differs from *C. incanus*, which it very much reſembles, in the branches being tomentoſe, not hairy; the leaves paler, ſoft, horizontal, ſeſſile, by no means either petioled or ſheathing, broad-lanceolate, moſtly three-nerved. Calyx not rough with hairs, the outer leaflets longer, the ſides reflex. Peduncles from the tops of the branches, many, ſcarcely longer than the leaves. Petals purple, not emarginate, ſomewhat crenate, flattiſh.

Native of Narbonne and Spain [g].

Cultivated in 1656, by John Tradeſcant, junr. [h].

11. Branches weak, ſlender, woody, ſpreading horizontally. This ſhrub is ſeldom more than two or three feet in height. [The peduncles and calyxes are covered with a thin wool. The calyxes are lanceolate. The corollas are purple [i].] Mr. Miller ſays white, coming out upon naked peduncles from the wings of the leaves, in june and july; and ſucceeded by ripe ſeeds in auguſt and ſeptember.

[It is a native of Portugal, and was cultivated in 1731, by Mr. Miller [k].

12. This is an upright ſhrub, three or four feet high. Branches round, aſh-coloured, angular at top, the younger ones dotted with yellow. Leaves petioled, oppoſite, lanceolate, very white, ſcarcely ſoft, without veins, obtuſe, flat, about an inch in length. Peduncle terminating, compound, white: partial peduncles below oppoſite, above alternate. There is a ſeſſile leaflet, narrower than thoſe on the ſtem, at the baſe of the peduncles and pedicels. Calyxes erect, ovate, acute, ſomewhat rugged: having two outer leaflets minute and linear, at the baſe of the larger ones.

It differs from ſeveral others to which it otherwiſe bears ſome reſemblance, in having the peduncles in panicles not at all hairy; the calyxes erect, ſmaller, acute, ſomewhat rugged, not ovate, acuminate, hirſute; and the ſmaller leaflets inſerted into the calyx itſelf, not below the baſe of it into the pedicel. In the habit of the leaves to *C. hybridus*, but in that they are broader [l].]

According to Miller, it riſes four or five feet high, and branches from the ground ſo as to form a large buſh. The leaves on the lower part of the branches have foot-ſtalks, but thoſe at the top coaleſce at their baſe and ſurround the ſtalk. The peduncles are a foot in length, naked, hairy; and put out two or four ſhorter peduncles on the ſide, each ſupporting three or four flowers. Theſe are large, of a bright yellow colour, but of ſhort duration. They appear in june and july.

[It is a native of Portugal. Vahl made his deſcription from numerous ſpecimens collected in Barbary.

It was cultivated in 1656, by John Tradeſcant, junior [m].

Sometimes the petals have a duſky ſpot at the baſe [n].]

β. Stem ſlender, woody, three or four feet high, with many ſlender branches. Leaves narrow, lanceolate, hoary, waved; flowering-branches axillary, ſlender, having two or three pairs of ſmall leaves, terminated by looſe bunches of flowers, each on a ſlender peduncle; they are of a dirty ſulphur-colour, and appear in june and july.

γ. Height three feet. Branches brachiate, forming a pyramid. Leaves lanceolate, an inch long, one-third of an inch broad in the middle, hoary white on both ſides, oppoſite. Peduncles naked. Flowers ſolitary, on naked oppoſite pedicels; corolla bright yellow, with a purple ſpot near the baſe. Native of Spain and Portugal; flowering here in june and july. Cultivated by Mr. Miller before the year 1760.

[13. A ſhrub reſembling Roſemary. Stem naked, purpliſh. Leaves oppoſite, ſeſſile, ſmooth and even, hirſute at the edges of the baſe, longer than the internodes, at the ends of the branches approximating. Floral or upper leaves ſhorter, ovate, flat. Peduncles terminal, longer than the leaves; with a few yellow flowers. Calyxes ovate, viſcid. Found in Spain by Loefling [o].——Introduced 1783, by P. M. A. Brouſſonet, M. D. [p]]

[a] Linn. ſyſt. [b] Hort. kew. from Turner. [c] Linn. ſpec. [d] Hort. kew. [e] Jacquin. [f] Hort. kew.

[g] Linn. ſpec. & ſyſt. [h] Hort. kew. [i] Linn. ſpec. [k] Hort. kew. [l] Vahl. [m] Hort. kew. [n] Vahl. [o] Linn. ſpec. [p] Hort. kew.

14. Stems low, trailing woody, ſeldom branching, and not more than four or five inches long. Leaves narrow and hoary. Flowers white, in ſmall cluſters at the ends of the ſtalks. It ſeldom continues longer than two years.

[Linnæus obſerves, that the umbels are pedunculed. Native of the South of France and Spain.]

Mr. Miller ſays, he received the ſeeds from Iſtria. [He cultivated it in 1731[b].

15. Root woody, creeping very much. Stems many, round, becoming woody; when young herbaceous, glaucous, branched, diffuſed, ſpreading horizontally or aſcending, very few erect. Leaves glaucous, linear, narrow, acute; with each leaf come out two others one-third ſhorter, between theſe from the axil other leaves come out ſucceſſively in the ſame manner, ſo as to form a bunch ſitting cloſe to the branch. The flowers are in thin villoſe racemes at the ends of the branches, on long ſmooth pedicels, and are without ſcent. Calyx hirſute, the two outer leaflets linear, the three inner broad-ovate, acute, wrinkled longitudinally, variegated with white, green, and purple. Petals yellow, ovate, obſcurely crenulate at the end, a little longer than the calyx. The outer ſtamens are barren. Capſule obtuſely three-cornered, obſcurely grooved, ſmooth, three-celled and three-valved, having in each cell two ovate ſeeds, convex on one ſide, angular on the other[c].

Native of the South of France about Montpellier. Cultivated 1690, in the Royal garden at Hampton Court[d].

16. *Stem* a foot high, erect; branches oppoſite, reddiſh. *Leaves* oppoſite, even, underneath obtuſely keeled; crowded leaflets from the axils. *Peduncles* terminating, ſolitary, ſcarcely longer than the leaves. *Calyx* three-leaved, even, equal. *Corolla* yellow, with ſcarcely the edge red. *Stamens* ſixteen, very ſhort, yellow, all fertile. *Piſtil* white. *Style* very ſhort. *Stigma* warted. It reſembles C. Fumana.—Native of the South of Europe[e].

17. *Stem* erect; the younger branches ſomewhat villoſe. *Leaves* acute, quite entire, ſubſeſſile, alternate, ſomewhat villoſe, pale green. *Racemes* terminating and axillary from the upper leaves, many-flowered and directed one way. Calyx ſomewhat villoſe, pale green. Petals yellow.—Spielmann ſent it to Jacquin in 1771[f].

Native of the Levant. Introduced 1788, by Monſ. Thouin[g].

18. Stamens about ſixteen fertile, and as many on the outſide without anthers. Leaves ſmooth, the edge rugged with a few very minute ſpines[h]. Stems ſeldom longer than a foot. Peduncle near the top of the ſtem. Calyxes ſomewhat villoſe. Petals yellow, longer than the calyx, and four ſeeds in each cell. *Scopoli* does not obſerve any ſtamens without anthers, nor a ſix-celled capſule, which Crantz attributes to it.—Moſt of the ſtamens, ſays Jacquin, have anthers, but ſome of the outer ones, which are ſhorter, have none. Capſule three-valved, and four or fewer black ſeeds in each cell. Leaves thick, keeled, dry, often thrown all to one ſide, and crooked, minutely dotted. Flowers drooping, on ſhort peduncles. Calyx conical, ſmooth, or ſlightly hairy, acceſſory leaves long and lanceolate; frequently variegated with purple veins. Petals ſulphur-coloured, ſmall, ſeldom expanded, but longer than the calyx, (Linnæus ſays not longer, Jacquin ſcarcely longer; he adds that the flower cloſes before ten o'clock). Fruit three-celled.—In the autumn this ſpecies is often covered with tufts of leaves in ſhape of roſes, ſo as to reſemble a Sedum more than a Ciſtus[i].

Native of Gotland, France, Switzerland, Auſtria, Carniola. Cultivated 1739, by Mr. Miller[k].

19. The old ſtems are procumbent and naked, but thoſe which bear leaves and flowers are erect. Leaves lanceolate, tomentoſe on both ſides, with a few white proſtrate hairs on the upper ſurface. Peduncles from the upper axils, and thoſe almoſt naked. Branches (one to three) umbelled, ſeldom exceeding four lines in length. Calyxes tomentoſe. Petals deep yellow. Capſule ovate, ſomewhat acute, three-cornered, ſcarce apparently hirſute, three-celled and three-valved, covered with the calyx. Seeds two or three in each cell, ovate, acute, angular[l].

*C. marifolius* ſent by Schreber, has the leaves of this, only more tomentoſe and oblong, but it has the corolla of *C. alpeſtris*. Perhaps then theſe three may be all one ſpecies[m].

β. Leaves lanceolate, obtuſe, marked with three lines, green on both ſides: two leaflets of the calyx briſtle-ſhaped[n].

The Portugueſe variety is larger. The leaves oval or obovate, obtuſe, pale aſh-coloured above, tomentoſe-hoary underneath. Umbel terminating, four-flowered[o].

Native of the South of France, Spain, Portugal, Auſtria, Carniola, Piedmont. Introduced in 1772, by Monſ. Richard[p].

20. Stem erect, a ſpan high: branches oppoſite, longer, ſpreading, ſomewhat deflected, rufous. Leaves with a few, ſtrigoſe hairs, moſtly twin, and ſubciliate: the lower petioled and ovate; the upper ſubſeſſile. Raceme terminal. Calyxes hiſpid. Corolla pale, with the petals ſcarcely emarginate. Perhaps a variety of the foregoing[q].

Allioni is of opinion that *C. incanus*, *marifolius*, and *italicus* of Linnæus make one ſpecies with his *alpeſtris*; in different ſituations having ſmooth or ciliate leaves; green on both ſides and hairy; aſh-hoary or even hoary. Different ſpecimens of *C. canus* are hoary on both ſides, or only underneath, or ſcarcely hoary, and furniſhed with hairs, ſo as to approach to *C. alpeſtris*. This ſometimes ſmooth, ſometimes hairy; inhabits mountainous and alpine places. *C. italicus*, mountains near the ſea, and ſituations leſs expoſed to the ſun. *C. canus*, barren rocky places expoſed to the ſun.]

21. Stems upright, ſhrubby, a foot and half high, ſending out branches the whole length. Leaves ſmall, ſilvery, oppoſite, ſmooth. The flower-ſtalks branch; and the flowers, which are white, are produced in ſhort ſpikes at the ends of the branches.

[According to Linnæus, it varies with lanceolate leaves ſmooth above, and oval leaves ſomewhat hairy above, but they are always denſely tomentoſe underneath and hoary white[r].

Scopoli deſcribes his *C. tomentoſus* to be erect, with ſimple ſtems ſix inches high. Bottom leaves elliptic, upper lanceolate acuminate; all villoſe above and tomentoſe underneath. On the top of the ſtem four or five large yellow flowers. He found it in the alps both of Carniola and the Tyrol.

Haller's deſcription does not agree in all points with this. The ſtems of his are procumbent and branching; and the flowers ſmall.

Native of the South of Europe. Cultivated in 1731, by Mr. Miller[s].

22. Jacquin thus deſcribes it.—Stem branched, diffuſed, ſhrubby at the baſe, as are alſo the branches, woody, perennial, round. Younger branches, racemes, leaves, and calyxes roughiſh, ſomewhat villoſe and hoary. Leaves on ſhort petioles, and quite entire. Racemes terminating, many-flowered, erect. Fruit-pedicels reflex. Three leaflets of the calyx ovate, obtuſe, concave; the two others ſhorter and very narrow. Petals fleſh-coloured with a yellow baſe, very entire and ſpreading. Filaments as well as anthers yellow. Piſtil green. Capſule roundiſh, one-celled, three-valved, at length becoming very ſmooth. Seeds few, brown.

Allioni ſuſpects this to be nothing more than a variety of *C. Helianthemum*, though the ſtem of this be more branching and ſhrubby; the leaves more

[a] Hort. kew. [b] Jacquin. [c] Hort. kew. [d] Linn. mant. [e] Jacquin. [f] Hort. kew. [g] Linn. ſyſt. [h] Haller. [i] Hort. kew. [k] Linn. mant. [l] Ibid. [m] Scopoli. [n] Linn. mant. [o] Hort. kew. [p] Linn. mant. [q] Spec. plant. [r] Hort. kew. [s] Jacquin.

ſtem

firm and somewhat hoary underneath. For it is not unusual to see C. Helianthemum of a rose colour in maritime situations; and stems that in cold places are annual and perishable, often become in warm climates perennial and shrubby.

Native of the county of Nice and Unelia.] Mr. Miller says, it was found growing near Smyrna by Dr. William Sherard, who first sent the seeds to England. [It was cultivated in the botanic garden at Chelsea in 1723[1].

23. *Stem* scarcely six inches high, oblique, all rugged. *Leaves* lanceolate, like those of Hyssop, roughish, not even, green on both sides. *Flowers* white, nodding; but when in bloom erect[2]. *Stems* many, slender. *Leaves* resembling those of wild Thyme, but thicker, more hirsute and hoary; dark green above, paler underneath, but hoary on both sides; without any younger ones arising from the axils. On the tops of the branchlets grow three or four small yellow *flowers*, sometimes more; the *petals* minutely notched at the end, but sometimes entire[3].——Flowering branches ascending, hairy. *Leaves* ovate, blunt, sessile, green on both sides, but covered with white hairs. *Racemes* terminating, consisting of three or four flowers, with small lanceolate bractes. *Calyx*, on the outside green and hairy; on the inside yellowish, with green lines. *Petals* yellow, finely scolloped[4].—*Leaves* hoary underneath, except in one specimen, where those of the stem were green on each side, and those of the side branches hoary[5].

Ray supposed our plant to be the same with John Bauhin's *Helianthemum alpinum folio Pilosellæ minoris*. Linnæus, Miller, and Hudson have continued the synonym; though the accurate Dillenius had observed, that Bauhin's plant gathered by Sherard on Mont Saleve, has broader and longer leaves, much more hairy than in ours; and that the whole plant is much stouter. Our plant certainly bears no resemblance to the *C. tomentosum*, which Scopoli has figured (carn. t. 24.), and to which he has affixed John Bauhin's synonym, and that of Haller, n. 1035. which seems to be the same with *C. marifolius* of Linnæus.

This species was first observed by Mr. Newton on some rocks near Kendal in Westmorland. It has been since found by Mr. Fitz Roberts at Buck Barrow Bank near between Brigsteer and Conswick, and about Cartmel-wells in Lancashire. At Bettram-Beuke, about a mile to the west of Kendal, by Mr. Richardson. In Caernarvonshire by Mr. Pennant; and in Anglesea, by Mr. Davies. It flowers in may.

I know not how it happens that Linnæus makes the corolla to be white. Miller does the same. His specific character is—*stem herbaceous procumbent, leaves ovate tomentose and sessile*.

24. According to Linnæus, in flora suecica, this differs from *C. Helianthemum* in having smaller, narrower leaves; stems smaller, more erect, smoother, more woody and redder; more flowers at the tops of the branches, and they less, without a spot in the middle; the petals smaller, not touching each other on the sides, emarginate, and of the same form with those in the flower of *Potentilla verna*. It is no variety, but sufficiently distinct in its appearance, the calyxes not being reflected, the corollas usually closed, the germ smooth, the style bent in, the stigma hispid usually four-cleft, and in the leaves having the edge not in the least reflected. The whole plant is perfectly smooth, so that it cannot be referred to *C. serpyllifolius*, though the figures of John Bauhin and Clusius represent the plant. To this it is added in the *fedema*, that the calyx is marked with lines and pubescent.

It does not however appear to Haller that this is very different from the common *C. Helianthemum*. See n. 19. and 20. There is little doubt but that the species have been too much multiplied. It is thus described by Jacquin—*Stems* many, procumbent, round, woody, brown, branched, at top dark purple or bay-coloured, about half a foot high, ascending towards the end, scarred by the fallen leaves, in other respects smooth; the younger branches only leafy. *Leaves* petioled, obtuse, quite entire, having white hairs on both sides and about the edge; sometimes however few or none on the under surface. *Racemes* terminating, few-flowered, villose, erect. *Flowers* sweet-scented; leaflets of the calyx very hairy, the two outmost linear, the three inner ones ovate: petals yellow, from roundish obovate, entire or slightly crenulate, scarce emarginate. Stamens and pistil all yellow. Stigma large, subquadrifid, muricate. Capsule hirsute, nodding. Seeds ovate, minute.

25. Root hard, perennial, gradually narrower as it descends. Stem a foot high, simple, villose at bottom. Root-leaves spreading on the ground, narrowed towards the base, white underneath: stem-leaves sessile, distant, opposite except the uppermost which are alternate. Flowers on the top of the stem in a sort of corymb. The two outer leaflets of the calyx shorter and lanceolate; the three inner ovate-acuminate, concave. Corolla yellow. Capsule globular, three-valved. Seeds ovate-compressed, blackish, fixed to partitions, opposite to the valves.

Native of Spain, in Catalonia and near Benicasi in the kingdom of Valencia[6]: also in the South of France, and about Pisa. Cultivated in 1748, by Mr. Miller[7].

26. Root annual. Stem upright, five or six inches high: that and the rest of the plant covered with spreading hairs. Leaves sessile, three or four pairs. Raceme filiform, terminating: peduncles longer, slender, often without bractes. Flowers erect, but when just out of bloom pendant. Two leaflets of the calyx spreading. Petals yellow, with a very dark purple spot approaching to black at the base. Fruits erect[8].

Native of the South of Europe, in sandy soils. Observed by Brewer, in sandy pastures on Llech ddue near Holyhead, Anglesea, flowering in june; and by Dr. William Sherard on the west side of the isle of Jersey, near Grosnez-castle.

Columna and Ray remarked it at the foot of mount Vesuvius, without any spots in the corolla.

27. This is a perennial plant, and has the appearance of *C. Helianthemum*, but the leaves are alternate. It was found in Canada by Kalm[9].

28. This rises higher with greater stems than the next species, but is not less hairy: having two or three leaves set at the several joints, longer and narrower than in *salicifolius*, and smaller pointed, somewhat rough, and of a deeper green colour; the flowers grow singly towards the top, and are of a pale yellow[10]. The calyx is longer than the corolla, three of the leaflets erect, and two spreading. Capsules the length of the calyx[11]: like those of *C. Helianthemum*, but more rigid, and half as large again. Seeds much smaller, of a ferruginous-red colour, angular, not mucilaginous[12].]

This plant puts on different appearances, according to the soil and situation. In a good soil, if the plants stand single, and are not injured by weeds, they will rise near a foot and half high, the leaves will be two inches and a half long, and near half an inch broad in the middle; but in a poor soil they do not rise more than half that height: the leaves are much narrower, and the seed-vessels not half so large. When they are cultivated in a garden they are found not to differ. It is an annual plant.

Native of the South of France and Italy; found also by Dr. William Sherard near Smyrna. [Cultivated in 1731, by Mr. Miller[13].

29. Capsules longer than the calyx. Petals yellow, smaller than the calyx and extremely fugacious. It varies with apetalous flowers[14].

Native of Spain and Portugal, monte Baldo, near

[1] Pallas. trans. vol. 33. [2] Linn. mant. [3] Dillenius. [4] Woodw. Mil. [5] Stokes in Withering.

[6] Cavanilles. [7] Hort. kew. [8] Linn. mant. and Villars. [9] Linn. spec. [10] Parkinson. [11] Linn. [12] Gærtner. [13] Hort. kew. [14] Linn. syst. and Hudson.

Verona, and in the county of Nice. Sandy paſtures near Bream-downs in Somerſetſhire. Annual; flowering in june and july.—Mr. Miller has made two ſpecies of it.

30. Reſembles very much *C. ledifolius*, but is many times larger, and not gloſſy.—*Stem* ſomewhat woody, a foot high, round. *Branches* next the root aſcending, ſhorter; on the ſtem, towards the top, alternate, erect, few. *Leaves* oppoſite, petioled, elliptic, ſpreading, ſubcomentoſe, veined, longer than the joints. *Stipules* in pairs, enſiform, half the length of the leaves, permanent. *Racemi* terminating, erect, ſtiff and ſtraight. *Flowers* alternate, accompanied with a leaf and two ſtipules, like the ſtem-leaves. *Petals* yellow. *Calyx* erect; the three inner leaflets three-nerved and acuminate; the two outer linear, ſhorter, ſpreading.—Native of Egypt. Annual[1].

31. Root annual, putting out one ſtem only, which is erect, but not able to ſupport the weight of the fruits. Leaves ſhining, thickiſh, furrowed on the upper ſurface where the nerve is below, ſublinear drawing to a point at each end. On each ſide the petiole is a ſubulate ſtipule. Pedancles ſolitary. Flowers drooping and without ſcent[2]. The two outer leaflets of the calyx ſmall; the three inner converging into an ovate inflated bladder, not opening till the fruit is ripe. Petals lanceolate, yellow, very ſhort, included. Stamens ten, ſmall, (five or ſeven, according to Jacquin). The larger leaflets of the calyx marked with four raiſed ciliate nerves[3]. Capſule as in *ledifolius* and *Helianthemum*. Seeds the ſame ſize as in the latter, ovate-acuminate, angular, obſcurely ſerruginous, very mucilaginous[4]. Native of Egypt.

It was firſt cultivated by Juſſieu[5], and by Miller in 1768[6]. The latter affirms that the petals are white, contrary to the authority of Linneus and Jacquin, and therefore probably a miſtake.

32. Branches rather erect, at bottom four-cornered. Leaves oval-lanceolate, thickiſh, petioled, oppoſite or elſe three on each ſide. Stipules very minute, racemoſe, marceſcent, ſeſſile. Peduncles round, crowded. The whole plant is covered with orbiculate ſcales, depreſſed in the centre. It was obſerved in Spain by Loefling[7].

33. *Stem* round, pubeſcent, whitiſh, bifid or ſparingly branched. *Branches* below the forking of the ſtem, lateral, ſimple, white. *Leaves* petioled, blunt iſh, ſpreading, hoary underneath. *Stipules* narrow-lanceolate, erect, the length of the petioles. *Racemes* oppoſite-leaved, erect or inclined. *Flowers* ſeſſile, crowded. *Calyx* ovate, leaflets alternate, linear. *Petals* obovate, yellow, ſcarcely larger than the calyx. *Stamens* uſually ten, ſhorter than the petals. *Germ* pubeſcent. *Fruits* obtuſe, covered with the calyx, ſeſſile, roundiſh[8].

The wild plant has the branches and leaves hoary on both ſides. The younger leaves of the axils are revolute. Stipules briſtle-ſhaped. Calyxes hairy, ſilky[9].

Native of Egypt, near Alexandria, *&c.*

34. This reſembles *C. Helianthemum* very much in all its parts, except in the flower, which has the petals oblong and narrow, ſpreading out like the points of a ſtar, as it is commonly painted. The ſeed-veſſels are alſo ſmaller.

It was diſcovered by Edward Du-Bois, near Croydon in Surry[10].

Mr. Hudſon and others conſider this as a mere variety of the common ſort; the only material difference being in the ſhape of the petals. Dillenius on the contrary, who cultivated it at Eltham, and obſerved it in many other gardens; and Miller who cultivated it above thirty years, and never found it to vary from ſeed, do not heſitate to pronounce it a diſtinct ſpecies.]

35. Stems long, trailing, and dividing into many branches. Leaves veined, of a light green on their upper ſide, but of a grayiſh colour beneath, with three narrow, erect ſtipules at their baſe. The flowers are pretty large, white, and grow in cluſters at the ends of the branches.

[Found by Magnol, on mount Capouladou near Montpellier. John Bauhin had it from Baſil by Richner.

36. Root perennial. Stems ſhrubby, erect or aſcending, round, ſcabrous, a ſpan high, branched. Leaves quite entire, glaucous, thickiſh, villoſe and ſomewhat ſcabrous, flat, obtuſe, petioled. Stipules linear or lanceolate, erect. Racemes oppoſite to the leaves and terminating, with many flowers pointing one way. Bractes linear. Calyx ſomewhat villoſe, the outer leaflets linear, the inner ovate, ſharpiſh, pale, with hairy ſtreaks, green or purple. Petals roundiſh, yellow, obtuſe, ſpreading very much, a little longer than the calyx. Stamens entirely yellow. Capſule the length of the calyx, triangularly-roundiſh, obtuſe, villoſe, one-celled, three-valved. Seeds brown, ſomewhat compreſſed. It flowers from june to auguſt; the bloſſoms expand only in the morning.

Native of Fuerteventura, one of the Canary iſlands; from whence it was ſent to Jacquin by Fr. Maſſon.

37. Root perennial. Stems ſomewhat ſhrubby at bottom, but the branches annual. Branches, leaves, racemes, and calyxes befet with ſcabrous villoſe hairs. Leaves oblong-lanceolate, petioled, oppoſite, quite entire, a little revolute. Racemes long, terminating. Outer leaflets of the calyx linear, three inner ovate, acute, pale, with greeniſh and hairy ſtreaks. Petals rounded, white or ſometimes very pale yellow, with a yellow baſe. Stamens yellow. It has a ſtrong ſmell like Bryony; and approaches to *C. mytabilis*, in habit, time of flowering and fruiting, and in the form of the capſule[11].]

38. Stems ſhrubby and crooked, covered with a purpliſh brown bark like common Heath. Branches ſlender. Leaves narrow and ſtiff, like thoſe of Thyme: they are oppoſite, and have no ſtipule at their baſe. [If ſo, it does not belong to this ſection.] The flowers are produced on naked peduncles, terminating the branches in a ſort of umbel; they are of a pale yellow colour, and a little ſmaller than thoſe of *C. Helianthemum*.

[Gouan refers Cluſius's plant to *C. velandicus*, *n.* 24. which ſee.

Native of the Alps of Auſtria. Cultivated in 1759. by Mr. Miller. It flowers from may to ſeptember[12].

39. Root woody, ſmall, creeping much. Stems many, a long ſpan in height, ſtraightiſh, at bottom woody and branched, but at length ſolitary, more ſlender, round, green, naked at top, villoſe and glutinoſe with very ſhort ſpreading hairs. Leaves ſubhirſute, even above, nerved beneath, three, four, or five together, unequal; the upper ones fewer, always alternate, more villoſe; the uppermoſt ternate or ſolitary. From the upper internodes there are rudiments of branches. Racemes few-flowered. Peduncles longer than the flower, glutinoſe, villoſe. Three leaflets of the calyx ovate, obtuſe, marked with green lines and red at the end; the other two linear, green, ſhorter. Corolla yellow, a little longer than the calyx[13]. Native of the South of Europe.

40. Linneus has given no deſcription of this ſpecies. Villars ſays, that it is a ſmaller plant than his *hirſutus*, but he doubts whether that be the ſame with the *pilofus* of Linneus. The leaves are narrower and diſpoſed in bundles. The flowers are yellow, but ſmaller and fewer. It is villoſe, but the villoſe is cloſer, which renders it whitiſh. The hairs do not iſſue from a gland, nor does it ſeem to be glutinous. The leaves much reſemble thoſe of Thyme, but they are not ſo hard, and they are a little whiter. Villars thinks it may poſſibly be the ſame with the *glutinoſus* of Linneus; and whether

[1] Linn. mant. [2] Jacquin. [3] Linn. mant.
[4] Gaertner. [5] Linn. mant. [6] Hort. kew.
[7] Linn. ſpec. [8] Linn. mant. [9] Vahl. [10] Forſk.
[11] Dillenius. [12] Jacquin. [13] Hort. kew.
[14] Gel. prov.

it be the ſame with the *piloſus* of that author is difficult to ſay.

Native of the South of France and of Spain. Cultivated in 1714, by the Dutcheſs of Beaufort[a].

41. Stems ſomewhat erect. Bractes ſolitary, at the ſides of the pedicels[b].—Gerarde refers to this all the ſmall ſpecies with white flowers, even *C. apenninus*[c]. And in this Allioni agrees with him. It varies with broader, ovate leaves, ſcarcely revolute; and narrower leaves, revolute on both ſides, uſually whitiſh. The white colour of the corolla varies exceedingly, and in the garden, the ſame plant will have white, ſulphureous and roſe-coloured flowers. It is alſo not uncommon on the maritime hills of the county of Nice, with roſe-coloured flowers[d]. Calyxes not hairy, in which it differs from *C. thymifolius*[e].

Villars deſcribes his *birſutus* as having the ſize and figure of *C. Helianthemum*, but as differing in the habit, riſſue, and colour; its woody ſtems, branched at firſt near the baſe, then riſe perpendicularly to ſix or even ten inches in height; the leaves are elliptic, villoſe, dark-coloured, revolute, with two ſtipules at the baſe; they are narrower than thoſe of *C. Helianthemum*.

Native of the South of France, Spain, and Piedmont. Cultivated by Mr. Miller, in 1759.

42. This is a weak ſhrub, half a foot in height, (according to Linneus, the ſtature of Roſemary[f]): the branches remotely muricated from the fallen leaves, tomentoſe and hoary at top. Leaves oppoſite, on very ſhort petioles, linear (or narrow lanceolate, revolute, underneath) moſt ſmoothly tomentoſe. Stipules briſtle-ſhaped, (linear, *Lin.*) purpliſh, a pair on each ſide, the length of the petiole. Flowers in a terminating, ſolitary (very long) pendulous raceme, all directed one way; without any bractes. Calyxes ſmooth, ovate, acute, angular: the two outer leaflets briſtle-ſhaped, ſhorter than the inner ones, which are ovate, nerved and furrowed.

It differs from *C. lavandulifolius* in having narrower ſhorter leaves, leſs tomentoſe and without a point at the tip, no bundle of leaves in the axils, the calyxes ſmaller and ſmooth, angular with the elevated nerves[g]. Native of Spain.

43. Root perennial, branched. Stem round, branched from the baſe, woody; the younger branches, with the leaves, ſtipules and racemes ſlightly villoſe and hoary. Stipules four, ſubulate, ſharp. Leaves oppoſite, lanceolate-oblong, ſharpiſh, quite entire, on ſhort petioles, rough on both ſides. Racemes terminating, many-flowered, upright; the pedicels bent back in fruiting-time. Bractes like the ſtipules, deciduous. The two outer leaflets of the calyx linear, the reſt ovate, acute and nerved. Petals yellow, with an orange-coloured baſe, either quite entire or crenulate about the edge. Capſule hirſute, ovate[h].

44. According to Linneus, the petals are ſuborbiculate, quite entire, yellow, generally with a tawny ring ſurrounding the receptacle. The racemes nod before they flower. The leaves have a few hairs ſcattered over them.—Branches ſubhirſute. Leaves hairy on their upper ſurface, and tomentoſe on their lower, ovate: the upper linear. Stipules four, hairy on their edges. Raceme terminal, three or five-flowered. Calyx membranaceous, hirſute, with brown or purpliſh nerves. Petals crenate or emarginate, very obtuſe, almoſt truncate, rather cordate than orbiculate, wrinkled. Germ hirſute, ovate[i].

Mr. Curtis has obſerved that the hairs on the leaves are forked. Stems numerous, round, ſmooth at bottom, at top ſlightly hairy, commonly reddiſh. Leaves oppoſite, on very ſhort petioles. The three upper leaflets of the calyx ovate, blunti'h, ſomewhat tranſparent, equal, three-ribbed, the ribs coloured and hairy; the two lower very ſmall, lateral and hairy. Capſule one-celled, three-valved: ovate, three-cornered, ſmooth, the valves clothed on the inſide with a thin membrane. Seeds about ten to each valve, angular, ſmooth, teſtaceous-ruſeſcent, mucilaginous[k].

Scopoli diſtinguiſhes this from his *grandiflorus*, by having the ſtipules ſhorter than the calyx; whereas in that they are longer. Pollich ſays that he has reckoned as far as ninety ſtamens in a flower.

The uſual colour of the corolla is a full yellow, but it varies to lemon-colour, white and even roſe-colour; it is alſo ſaid to be found with a double corolla. It varies likewiſe ſomething in the leaves.

Allioni ſuſpects that the *ſerpyllifolius* of authors is the ſame with his *alpeſtris*; and that his *ſerpyllifolius* may be a variety of this ſpecies. He obſerves farther, that *C. Helianthemum* varies ſo much from ſituation, as to give him reaſon to ſuſpect that *C. anguſtifolius* and *hiſpanicus* of Juſſieu; *C. grandiflorus*, *helianthemoides*, and *ſerpyllifolius* of Crantz, and *roſeus* which he has figured, are but one ſpecies with this.

Found in dry paſtures in many parts of Europe. With us generally in calcareous ſoils. Perennial; flowering from june to auguſt.

45. Stems ſeveral, branching very much, woody at bottom, and the ſize of a common quill, procumbent and brown: from theſe ſpring annually numerous, ſmooth, aſcending branches, about a foot in length. Leaves oppoſite, petioled, lanceolate-oblong, bluntiſh, quite entire, green, flat not revolute. Stipules in pairs on each ſide, lanceolate-acuminate, upright. Racemes terminating, long, upright, appearing ſlightly villoſe when viewed with a magnifier. Two leaflets of the calyx linear; three ovate, concave, pale with green ſtreaks, obſcurely villoſe. Petals obovate, ſharp at the baſe, pale yellow or roſe-coloured. Stamens entirely yellow. Capſule triangular-roundiſh, ſomewhat villoſe, one-celled, three-valved. Seeds few, brown. It flowers in may and june; and the ſeeds ripen in july[l].

46. Stem erect, ſending out many ſide branches, with the joints pretty cloſe. Leaves very narrow, oppoſite, revolute, the upper ſurface of a lucid green, and the under hoary. Flowers large, white, in ſmall cluſters at the ends of the branches.

[Allioni obſerves that the calyx is whitiſh, that it has nothing rough or hairy about it, and that it is a very diſtinct ſpecies.

Native of the South of France, Spain and Villafranca. Cultivated by Mr. Miller in 1759.

47. This is a foot in height, branching and ſpreading. Leaves green and rough with hairs on the upper ſurface, on the lower hoary[a].

Miller makes two ſpecies of this, and thus deſcribes them:] 2. The ſtalks are much larger, and extend farther than thoſe of *C. Helianthemum*; the leaves are longer and hoary; there are three acuminate erect ſtipules at each of the lower joints. The racemes are much longer; the calyx is hairy and whitiſh; the corollas are white and larger.

4. The ſtems are more erect, the leaves not ſo long, the ſtipules very ſmall, and the whole plant very hoary. The flowers are white, the ſpikes ſhorter and more compact.

[Native of Italy, on the Apennines. Cultivated in 1731, by Mr. Miller[a].

48. Branches many ſpreading on the ground, hoary towards the end, towards the baſe browniſh, with frequent joints and naked, moſt of them a hand in length, but the inner and younger branches much ſhorter. Leaves thickiſh, ſomewhat ſtiff, revolute, having a prominent rib underneath, hoary, frequent; with others much ſmaller growing from the axils. Flowers few terminal, of the ſame form and ſize with thoſe of the common ſort (n. 44.), but white; petals ſlightly crenate, generally cordate.

[a] Hort. Beav. [b] Gouan. [c] Linn. ſyſt. [d] Allioni. [e] Sauvages. [f] Linn. mant. [g] Vahl. [h] Jacquin. [i] Relham.

[a] Gartner. [b] Jacqu. mic. [c] Linn. [d] Hort. kew.

are apt to fall on the ground, and appear unſightly.

Theſe ſhrubs are propagated by ſeeds, and alſo from cuttings; but the latter method is ſeldom practiſed, unleſs for thoſe ſorts which do not produce ſeeds in England; theſe are the twelfth and the fifty-fifth ſorts; all the others generally produce plenty of ſeeds, eſpecially thoſe plants which came from ſeeds; for thoſe which are propagated by cuttings, are very ſubject to become barren, which is alſo common to many other plants.

The ſeeds of theſe plants may be ſown in the ſpring upon a common border of light earth, where the plants will come up in ſix or ſeven weeks, and, if they are kept clear from weeds, and thinned where they are too cloſe, they will grow eight or ten inches high the ſame year: but as theſe plants, when young, are liable to injury from hard froſt, therefore they ſhould be tranſplanted when they are about an inch high, ſome into ſmall pots filled with light earth, that they may be removed into ſhelter in winter, and the others into a warm border, at about ſix inches diſtance each way: thoſe which are potted, muſt be ſet in a ſhady ſituation till they have taken new root; and thoſe planted in the border muſt be ſhaded every day with mats till they are rooted, after which the latter will require no other care but to keep them clean from weeds till autumn, when they ſhould have hoops placed over them, that they may be covered in froſty weather: thoſe in the pots may be removed into an open ſituation, ſo ſoon as they have taken new root, where they may remain till the end of October, but during the ſummer they muſt be ſhifted into larger pots, and be frequently watered: the end of october they ſhould be placed under a hot-bed frame to ſcreen them from the cold in winter, but, at all times, when the weather is mild, they ſhould be fully expoſed to the open air, and only covered in froſts: with this management, the plants will thrive much better than when they are more tenderly treated.

The above method is what the gardeners generally practiſe: but thoſe who are deſirous to have their plants come forward, ſhould ſow the ſeeds on a moderate hot-bed in the ſpring, which will bring up the plants very ſoon: but theſe muſt have plenty of air when they appear, otherwiſe they will draw up very weak: when the plants are fit to remove, they ſhould be each planted into a ſeparate ſmall pot, and plunged into a very moderate hot-bed, obſerving to ſhade them till they have taken freſh root; then they muſt have plenty of air admitted to them every day in good weather, to prevent their drawing up weak: and by degrees they muſt be hardened, ſo as to be removed into the open air the beginning of june, and then they may be treated in the ſame manner as is before directed for the other ſeedling plants. By bringing the plants forward in the ſpring in this method, they will grow to the height of two feet, or more, the firſt ſummer, and have many lateral branches, ſo that they will be ſtrong enough to plant abroad the following ſpring, and moſt of them will flower the ſame ſummer; whereas thoſe which are ſown in the full ground, rarely flower till the year after; nor will they be ſo ſtrong, or capable to reſiſt the cold of the ſecond winter, as thoſe which have been brought forward.

In the ſpring following, theſe plants may be turned out of the pots, with all the earth preſerved to their roots, and planted in the places where they are to remain (for they are bad plants to remove when grown old,) obſerving to give them now and then a little water, until they have taken freſh root; after which time, they will require no farther care than to train them upright in the manner you would have them grow; but thoſe plants which were at firſt planted into a border in the open ground, ſhould be arched over, and covered with mats in froſty weather, during the firſt winter, but may be tranſplanted abroad the ſucceeding ſpring. In removing theſe plants, you ſhould be careful to preſerve as much earth about the roots as you can; and if the ſeaſon ſhould prove hot and dry, you muſt water and ſhade them until they have taken freſh root, after which they will require no other culture than was before directed.

Theſe plants may alſo be propagated by cuttings, which ſhould be planted in may or june, upon a bed of light earth, keeping them ſhaded with mats, and frequently refreſhed with water, until they have taken root; which will be in about two months time, when you may tranſplant them into pots filled with good freſh light earth, and they ſhould be ſet in a ſhady place until they have taken root, then they may be expoſed to the open ſun until october, when you ſhould remove them into ſhelter the firſt winter; but the ſucceeding ſpring you may plant them abroad, as was before directed for the ſeedling plants.

Moſt of the perennial ſorts of Dwarf Ciſtus or Sunflower (Helianthemum) will thrive in the open air in England: they are propagated by ſeeds, which may be ſown in places where they are to remain, and will require no other care but to keep them clean from weeds, and to thin them where they are too cloſe, always obſerving to leave thoſe ſorts at a greater diſtance, whoſe ſtalks trail on the ground to the greateſt length.

Theſe plants will continue ſeveral years in a poor dry ſoil; but in rich ground or moiſt ſituations they ſeldom laſt long: but as they ripen ſeeds in plenty, they may be eaſily renewed.

For the annual ſorts, the ſeeds may be ſown in april upon a bed of common earth: the plants will come up in may, and flower in july.

[Mr. Curtis adds, that though our common Dwarf Ciſtus (*n.* 44.) cannot vie with thoſe which are the produce of warmer climates, yet it is one of the moſt ornamental of our native plants, and admirably well calculated to decorate a rock or dry bank, eſpecially if its ſeveral varieties, with white, roſe and lemon-coloured flowers be intermixed. It is hardy, eaſily propagated either by ſeeds or cuttings, and continues for the greateſt part of the ſummer to put forth daily a multitude of new bloſſoms. If the variety with double flowers, mentioned by Haller, could be obtained, it would be a valuable acquiſition to our gardens.]

CISTUS. See *Andromeda*, *Dioſma*, *Kalmia*, *Ledum*, *Rhododendron*, *Telephium*, *Turnera*.

CISTUS indicus & virginicus. See *Azalea*.]

CITHAREXYLUM. (*From κιθαρα a harp, and ξυλον wood.*)

Engl. *Fiddle-wood.*

Fr. *Guittarin* or Bois de *Guittarre.*

*Linn. gen. n.* 760. *Reich.* 818. *Schreb.* 1019. *Gaertn. t.* 76. *Juſſ.* 108. *Jacqu.* 117.

Claſſ. 14. 2. Didynamia Angioſpermia.

Natural order of *Perſonatæ*. *Juſſieu* Juſſ.

GENERIC CHARACTER.

CAL. *Perianth* one-leafed, bell-form, five-toothed, acute, permanent.

COR. one-petalled, funnel-wheel-form: *tube* twice as long as the perianth, thicker at the top: *border* five-parted, two-lipped; *ſegments* above villoſe, oblong, truncate, flat, very ſpreading.

STAM. *Filaments* four, with the rudiment of a fifth from the middle of the tube, filiform, two of them ſomewhat longer. *Anthers* oblong, twin, erect.

PIST. *Germ* roundiſh. *Style* filiform, the length of the ſtamens. *Stigma* obtuſe-headed.

PER. *Berry* roundiſh, ſomewhat compreſſed, one-celled.

SEEDS two, ovate, two-celled, convex on one ſide, concave on the other, emarginate at the end.

ESSENTIAL CHARACTER.

*Cal.* five-toothed, bell-form. *Cor.* funnel-wheel-form; ſegments above villoſe, equal. *Berry* two-ſeeded. *Seeds* two-celled.

SPECIES.

[1. Citharexylum cinereum. *Aſh-coloured Fiddle-wood. Lin. ſpec.* 872. *Reich.* 3. 160. *Jacqu. amer.* 185. *t.* 118. *ed.* 2. *pict.* 92. *t.* 178. (teres.) *Brown. jam.* 264. *n.* 1. *Plum. ſpec. t.* 162. *f.* 1.

Jaſminum.

Jasminum. *Plum. it.* 157. *f.* 1.
*Branches round; calyxes toothed.*

2. Citharexylum caudatum. *Oval-leaved or long-spiked Fiddle-wood.*
*Lin. spec.* 872. *Reich.* 3. 160. *Brown. jam.* 265. *n.* 5. *t.* 28. *f.* 2.
C. erectum. *Swartz prodr.* 91.
*Branches round, calyxes truncate.*]

3. Citharexylum quadrangulare. *Square-stalked Fiddle-wood.*
*Lin. syst.* 564. *Reich.* 3. 161. *Jacqu. hort.* 1. *t.* 22. *amer. pict.* 92. *Mill. dict. n.* 1. cinereum.—forte *caudatum*, Swartz.
*Branches quadrangular.*

[4. Citharexylum villosum. *Hairy-leaved Fiddle-wood.*
*Jacqu. collect.* 1. 72. *Ait. hort. kew.* 2. 349.
C. subserratum. *Swartz prodr.* 91.
*Leaves villose.*]

5. Citharexylum melanocardium. *Black-heart Fiddle-wood.*
*Swartz prodr.* 91. *Brown. jam.* 265. *n.* 2.
C. paniculatum. *Gærtn. fruct.* 1. 270.
C. album. *Mill. dict. n.* 2.
*Branches quadrangular, racemes terminating compound, flowers four-flamened.*

DESCRIPTIONS, *&c.*

1. [This is a tree rising with a round upright trunk not more than a foot in diameter to the height of fifteen or twenty feet, with a handsome branching head. Leaves oblong-oval, acuminate at both ends, entire, shining, commonly opposite, but sometimes alternate, and frequently three together, of different sizes, but mostly above half a foot in length. The petioles have often a few glandular holes on each side above, exuding honey-drops in the younger ones. Racemes terminating, denie, quite simple, pendulous, nine or ten inches long. Flowers small, numerous, odoriferous, on short pedicels. Corolla white. Berries succulent, shining, soft, roundish, first green, next red, and finally black[a].

Browne says, that it rises above eight or nine feet in height; that the veins of the leaves, and all the tender buds, are of a brown colour; the bark of the trunk and lower branches of a whitish ash-colour. It is very common in all the Savannas of Jamaica; and is called *Old-woman's bitter*. Also in the woods of Martinique, where the French call it *Bois cotelet*[b].

2. The leaves are obovate. Both they and the racemes are erect. It is but a shrub, says Browne, which seldom grows above ten or twelve feet in height; and bears a great number of small berries, disposed on divided spikes at the extremities of the branches. It is pretty common about *Sixteen-mile-walk* in Jamaica. Introduced in 1763, by Mr. John Bush[c].

3. This differs from the first species in having the berries red when ripe, and all the branches round indeed, but made unequal by four ribs running down them. The bark is ash-coloured, and it agrees with the *cinereum* in all other circumstances. It is perhaps only a variety. The French call it *Bois cotelet carré*[b].

Native of the West Indies, Jamaica, Martinique, *&c.*

Mr. Miller thus describes it:] It has an upright trunk fifty or sixty feet high, sending out branches on every side, which have several angles, or ribs, running longitudinally, garnished by three oval spear-shaped leaves at every joint, standing in a triangle, upon short foot-stalks. The leaves are about four inches long, and one or two broad, of a lively green colour, pretty much notched on their edges, having several deep veins running from the midrib to the edges; they are of a white colour on their upper side, and very prominent on their under. The flowers come out from the sides, and also at the end of the branches, in loose bunches, which are succeeded by small pulpy berries, including two seeds in each.

[4. This is a small tree about ten feet in height. The trunk and older branches are round and ash-coloured, the younger ones four-cornered and green; the young shoots are villose. Leaves opposite, on short petioles, lanceolate or obovate, acute, firm, serrate with a few sharp distant teeth towards the tip, very seldom quite entire, somewhat rugged on the upper surface, extremely soft and villose on the lower, three inches long, with an oblong, deep-green glandular hole on each side of the petiole at top. Racemes half a foot long, hanging down at the ends of the branchlets. Flowers numerous, on short pedicels, villose all over, and smelling extremely sweet. Calyx truncate. Corolla white.

Native of St. Domingo[a]. Introduced in 1784, by Mr. John Græfer[c].

5. This tree frequently rises to the height of forty or fifty feet, and is generally looked upon as one of the hardest and best timber trees. The body grows to a considerable thickness, and is covered with a thick whitish bark, which, like the grain of the wood, winds in a loose spiral form. The leaves are pretty long, rugged and slightly serrate. The flowers are disposed in bunches at the extremities of the branches. The berries are small and yellow; and are sometimes eaten by the negroes: they contain each two hemispheric shells, with two kernels; the nuts may be easily parted into two lobes or segments[a].

Gærtner describes the berry as ovate, black, smooth, one-celled, containing two ovate, hard, plano-convex shells, marked with an obscure groove on the back, and two-celled. In each cell is a single, oblong, subtrigonal, albescent seed.

Native of Jamaica, chiefly in the low lands and savannas.

If this be the *C. album* of Miller:] the seeds were sent him by William Williams, Esq. from Jamaica.

Mr. Miller affirms, that the French call this tree *Fidelle*, from its faithfulness or durability in building; and that the English have corrupted the name to *Fiddle-wood*, as if it were used for making musical instruments, which is a mistake.

PROPAGATION AND CULTURE.

The third sort has been long preserved in some of the curious gardens in England, for the sake of variety. The leaves continuing through the year, and being of a fine green colour, make a pretty variety in the stove during the winter season; this may be propagated either by seeds, or cuttings; the latter is the usual method in England, where the seeds are not produced; but when seeds can be obtained from abroad, the plants which rise from them are much better than those raised from cuttings.

The seeds of this sort should be sown in small pots early in the spring, and plunged into a fresh hot-bed of tanners bark, and treated in the same manner as other exotic seeds, which are brought from hot countries. If the seeds are fresh, the plants will appear in six or seven weeks, and in about one month more will be fit to transplant; when this is done, the plants should be carefully separated, so as not to tear, or break off their roots, and each planted in a small pot filled with light fresh earth, and plunged into the hot-bed again, observing to shade them till they have taken fresh root; after which they should have a large share of air admitted to them in warm weather, and must be frequently watered; in autumn the plants should be removed into the bark-stove, where it will be proper to keep them the first winter, till they have obtained strength; then they may be afterward kept in a dry stove in winter, and in the middle of summer they may be exposed in the open air for two or three months, in a warm situation, with which management the plants will make better progress than when they are more tenderly treated.

If the cuttings of these plants are planted in small pots during the summer months, and plunged into a

[a] Jacquin. [b] Ibid. [c] Hort. kew.

[a] Jacquin. [b] Hort. kew. [c] Browne.

the first edition of Camden by Bishop Gibson, being printed in 1695.

The editor of the Biographia Britannica, Article *Raleigh*, speaking from a tradition preserved in the family, tells us that these Oranges were raised by Sir Francis Carew from the seeds of the fruit the Oranges which were imported into England by Sir Walter Raleigh, who had married his niece the daughter of Sir Nicholas Throckmorton. But this is not probable, for the plants raised from such seeds would have degenerated and in fact would not produce fruit. And it is not probable that they were then brought from Italy.

Hasselquist, Bradley, &c. [illegible] Orange [illegible] great pleasure [illegible] on the south side of [illegible] as full liberty to [illegible] Mr. Henry Da[illegible] the gardener [illegible] feet high, the girt [illegible] and the spreading of the branches [illegible] and grew for another.

[illegible] were actually settled [illegible] 1709-10. The ye[illegible] before this [illegible] killed by a prevailing [illegible] or [illegible] green-houses to [illegible] the doubling of every [illegible] as [illegible] have destroyed [illegible] happened.

*Extraordinary Sight.* At Orange in [illegible] a very remarkable phenomenon [illegible] fort-night all [illegible] to produce [illegible] orange, the quality [illegible] a grateful acidity [illegible] and promoting [illegible] of [illegible] and inflammatory disorders. It is also considered as a powerful antiseptic, and of great efficacy in preventing and curing the scurvy. [illegible] Chile [illegible] cranic politics [illegible] centre. The seed of orange [illegible] [illegible] to take [illegible] Sailors [illegible] [illegible] [illegible]

are certainly no more than varieties, but theſe alſo with the Shaddock and the Orange, which are hardly to be conſidered as ſpecifically diſtinct.]

Mr. Miller affirms, that he has never known the common Lemon vary to the Lime, when raiſed from ſeeds, nor the Lime vary to the Lemon: but that he has always found them continue their difference in leaf and branch; he therefore ſuppoſes them to be ſpecifically different.

The Lime is not often brought to England, nor is it much cultivated in Europe; but in the Weſt Indies the fruit is preferred to the Lemon, the juice being reckoned more wholeſome, and the acid being more agreeable to the palate.

2. [The Orange is a middle-ſized evergreen tree, with a greeniſh-brown bark; in its native country the branches are prickly. Leaves broad-lanceolate, almoſt quite entire, ſmooth, with the petioles commonly winged. Pedunceles many-flowered, terminating. Corolla white. Stamens twenty, connected in ſeveral parcels. Berry ſubglobular, flatted (an oblate ſpheroid), of a golden colour, thinniſh, odorous, three inches in diameter, divided within into about nine cells, filled with a bladdery pulp, having a ſweet-acid juice in it; rind fleſhy, of a middling thickneſs, covered with a pellicle which is ſomewhat biting and bitter to the taſte.

The above deſcription, ſays Loureiro the author of it, agrees particularly with that ſort of Orange which is moſt common all over the world, and is known in Europe by the name of Portugal or China Orange, becauſe it was brought from China by the Portugueze, and by them diſperſed over Europe.

It is a native of India, China, &c. and was obſerved by our circumnavigators in the iſle of Tanna in the South Seas.

There are innumerable varieties of the Orange in China, and other countries of Aſia, as well as in South America and the Weſt Indies, and even in Europe.

Loureiro deſcribes the moſt grateful of all the Oranges, as a diſtinct ſpecies, under the title of *Citrus medica*. The branches do not ſpread ſo much as in the common Orange, but are rather aſcending; and they are not prickly. Leaves lanceolate, quite entire, dark green, on *linear* petioles. Berry red within and without, twice as large as the common ſort, being five inches in diameter: the ſkin thick, juicy, ſweet, eatable, and irregularly tuberculed. It abounds in Cochinchina.

The moſt eſteemed fruit in China, according to Groſier, is very ſmall, with a ſmooth ſoft ſkin, of a reddiſh yellow colour. They have alſo the Four-ſeaſon or Everlaſting Orange, ſo called from its being always in fruit and bloſſom; this alſo bears a very ſmall fruit: the large Clove or Mandarine; and the ſmall Clove or Mandarine: the Soft Cuſhion Orange: the Gold Orange, &c. &c.

The Chineſe Oranges are in general firmer than thoſe of Europe, their ſkin does not eaſily peel off, and the pulp will not ſeparate into ſmall diviſions. They commonly give them to the ſick, ſoftening them a little at the fire, and mixing ſugar with them.

Loureiro deſcribes another ſort, under the name of *Citrus ſuſia*, or brown Orange, which in ſome reſpects ſeems to approach the Seville Orange of Europe. It is a tree above the middle ſize, with abundance of twiſted branches, that riſe a little, and are armed with many long ſtout ſpines. Leaves ovate-lanceolate, quite entire, dark green, of an unpleaſant odour, on large, winged, heart-ſhaped petioles. Flowers on many-flowered ſubterminating peduncles, white, and not very ſweet. Berry globular, two inches in diameter, rough, browniſh-green: the juice pale, acid, bitteriſh and unpleaſant. It is very common in Cochinchina.

The Seville Orange differs little from that of China in the tree, except that it is more hardy, and that the leaves are larger and handſomer. The fruit however is very different in the colour of the peel, and in the taſte both of that and of the juice, as is well known.]

The varieties of the Orange moſt known in the Engliſh gardens are; beſides the Seville and China already mentioned:

1. The willow-leaved or Turkey Orange.
2. The yellow and white ſtriped-leaved.
3. The curled-leaved.
4. The horned Orange.
5. The double-flowering.
6. The hermaphrodite.
7. The Dwarf or Nutmeg Orange.

Theſe and other varieties of this, the Lemon, Lime and Citron, are figured by Ferrarius in his Heſperides.

The Horned Orange, like the figured Lemon or Citron deſcribed above, divides into parts, ſpreading out in form of horns: this and the diſtorted Orange are preſerved merely for variety, not being ſo beautiful, as the common ſort.

The leaves of the Dwarf Orange are very ſmall, and grow in cluſters; the joints of the branches are very near each other; the flowers grow very cloſe together, and appear like a noſegay, the branches being covered with them. This, when in flower, is proper to be placed for ornament in a room or gallery, which it will perfume with its flowers: but it requires care, and is ſickly in health.

[The firſt China Orange, ſays Evelyn, (that appeared in Europe) was ſent for a preſent to the old Conde Mellor, then Prime Miniſter to the King of Portugal; but of that whole cafe that came to Liſbon, there was but one only plant which eſcaped the being ſo ſpoiled and tainted, that with great care it hardly recovered to be ſince become the parent of all thoſe flouriſhing trees of that name, cultivated by our gardeners, though not without ſenſibly degenerating. Receiving this account, adds our famous planter, from the illuſtrious ſon of the Conde, I thought fit to mention it, for an inſtance of what induſtry may produce in leſs than half an age.

South America and the Weſt Indies have been furniſhed with this fruit, ſo ſalutary and agreeable to the palates of the people, and ſo congenial to thoſe hot climates, from Spain and Portugal.]

Mr. Miller informs us, that he ſent two ſmall trees of the true Seville Orange to Jamaica, where this ſort was then wanting, and that from theſe many other trees were budded, which produced plenty of fruit. Some of theſe were ſent to England; and although they were long in their paſſage, yet they were greatly ſuperior to any of the fruit imported from Spain and Portugal, affording three times the quantity of juice.

[In England this tree has been cultivated certainly ſince 1629. The firſt ſhifts made to preſerve it, will not be incurious to the reader.

"The Orange tree (ſays Parkinſon) hath ſhifted "with ſome extraordinary looking and tending of "it, when as neither Citron or Lemmon trees "would by any means be preſerved any long time. "Some keepe them in great ſquare boxes, and lift "them to and fro by iron hookes on the ſides, or "cauſe them to be rowled by trundels, or ſmall "wheeles under them, to place them in an houſe, "or cloſe galleric for the winter time: others plant "them againſt a brieke wall in the ground, and "defend them by a ſhed of boordes, covered over "with ſeare-cloth in the winter, and by the warmth "of a ſtove, or other ſuch things, give them ſome "comfort in the cobler times: but no rare or "meane provition will preſerve them." *Parad.* 584. But Biſhop Gibſon, in his additions to Camden's Britannia, probably from Ambrey, ſays that the Orange trees at Beddington in Surrey, introduced from Italy by a Knight of the noble family of the Carews, (Sir Francis) were the firſt that were brought into England; that they were planted in the open ground, under a moveable covert during the winter months; and that they had been growing there more than a hundred years; that is before 1595.]

...first edition of Camden by Bishop Gibson, being printed in 1695.

The editor of the Biographia Britannica, article *Raleigh*, speaking from a tradition preserved in the family, tells us that these Orange trees were raised by Sir Francis Carew from the seeds of the fruit Oranges that were presented to England by Sir Walter Raleigh, who had married his niece the daughter of Sir Nicholas Throckmorton. But this is not probable, for the plants raised from such seeds would have required many months longer to produce fruit, and it is well known that they were then sought from Italy.

Professor Bergius observes, that these trees delight in a great degree of heat, and therefore in the south of Europe, or even in Africa, they grow to a large size, and bear fruit in the open air; but in Sweden, Mr. Henry Lee, the gardener to the Chelsea physic garden, the first in Britain to raise orange trees, and the first who brought the method of budding and inoculating them to perfection, assured me, that he never could raise them to any size, and that they would not have endured the cold of our winters in the open air.

*Citrus Nobilis*, or Orange, the fruit of which is a very esteemable pleasant fruit. The Portuguese, who carried it to perfection in their settlements in the East Indies, have given it the name of China orange, as if it had been originally brought from China; but it is certainly a native of the East Indies, and was carried to China by the Portuguese, who have long had a settlement at Macao.

*Citrus Medica*, or Citron, is of similar virtues with the fruit of which they and the Lemon, and the rind and juice of the Orange, are used in the colleges of the London, Edinburgh, and Dublin physicians, in many compositions. The Citron is of a more cordial nature than the Orange, and the rind of the fruit candied is the part usually kept in the shops. The Lemon is more cooling than either of the former.

[illegible] however, differs in having only one or two scarlet flowers, not panicled as in that. Native of Japan, where the fruit ripens in December and January, and is very fine and pleasant.

Lagerstroemia, with ornamental seeds, perennial scarlet flowered scarlet flowered, hitherto. The fruit is said to be a pleasant pulp.

Stems nearly two yards in height. Branches opposite, erected and angular. Leaves, opposite, very short, if not sessile, ovate. Flowers terminal, dilated and compressed at the base, in pairs, were numerous, smooth, white at the edge, and in length. Corolla white, [illegible] double the length of the petals. The petals [illegible] wedges in [illegible] long, [illegible] them [illegible] flowers in spring. Calyx [illegible] [illegible] when the leaves burst forth. Two [illegible] five.

[illegible]

[illegible]

All the trees and shrubs that are natives and treated in the same manner as the citron in the Orange.

Where the trees are to be raised in considerable Orangery, you should procure some Carthagena, which were only seeds, for the sake of those who had not yet [illegible] other part for the benefit of growing as [illegible] they will make both of sufficient Orange, Lemon, or Citron next to them are the Seville Orange trees. The best fruit is usually to be had from [illegible] which are commonly easy to be procured in the spring of the year, when preparing for the [illegible] or either hot-bedding of tan or horse dung, the last of which is much the better, if you can easily procure it. When the bark is at a moderate degree of heat, you shall have your trees to pots of good rich earth, and plunge them into the hot-bed, observing to give them water [illegible] and [illegible] the glasses [illegible] the day, to give [illegible] air, but let the frosts should [illegible] or [illegible] in [illegible] [illegible] [illegible]

pots; for if they are but big enough to contain their roots, it is sufficient at first planting; and be sure to put some potsherds and large stones in the bottom of each pot, to keep the holes at the bottom of the pots from being stopped with earth, that the water may freely pass off, and wrap some mat round their stems, from bottom to top, to prevent the sun from drying their barks; then plunge their pots into the bark-bed, watering them well to settle the earth to their roots, frequently sprinkling the same all over their heads, and stems, being very careful not to overwater them, especially before they have made good roots; and observe to screen the glasses of your hot-bed from the sun in the heat of the day.

In some trees, take to graft, budd, or inoculate on the stocks of the same kind, as Oranges on Orange-stocks, &c. which, if rightly performed, they will have made strong shoots by the beginning of August, at which time you should stop their growth, to obtain several lights to forward their heads; and now you must give them air plentifully, and begin to harden them, that in the middle of July they may be removed into the open air, at some warm situation, defended from the great heat of the sun, and cold winds, that they may be hardened before winter. About the end of September you should house their plants, placing them at first in the front of the green-house, near the glasses, keeping the windows open at all times when the weather will permit; and about the latter end of October, when you bring in the Myrtles, and other less tender trees, you must set your Oranges in the warmest and best part of the house, placing lower plants or trees to the front, to hide their stems. During the winter, let your waterings be frequent, but give them not too much at a time; for now their heads are but small, and therefore incapable to discharge too great a quantity of moisture, and take great care to guard them from cold.

In the spring, when you begin to take out some of your hardy plants of the green-house, to air, and clean, as also to prune and dress some of your Orange-trees, taking out the upper part of the earth in the pots, adding them an equal quantity of fresh good earth, new earth, laying them on a little extraordinary round the stalk of the tree, but do not dig it so near the stem of the tree, as to plant them at wider distances in the pots, that the fibrous roots may not be wounded; give them also fresh mould, at the same time carefully shaking off the old earth into the open alleys, or other out-of-the-way places, that they are removed from, the mornings after a cool night, when there is no frost, a great check, which will bring the leaves of your flowers, and many times kill the tender woody parts of the shoots; but the best time for your Orange-trees, during the summer, is when you are so much defended as possible, to guard them from those winds, for both their and the beautiful fruit.

As each tree advances, it will be necessary in the summer to stop strong shoots where they grow irregularly, to bring the head to a handsome form; but do not shorten any of the young shoots all at once, as in the autumn, which will hide the tree with fruit; but to stop a few at a time, but endeavour to have a regular head, and train strong shoots where they are wanting, to fill up the vacancies, where they are too thin.

During the summer, your Orange-trees will require frequent waterings, being weak of roots, especially if they are large; observe in those waterings to give the trees such a quantity at once as to moisten the earth to the bottom of the pots, so as to have the roots to receive the benefit of it, which you cannot do if trees stand long in a small quantity of water at once; but water them often by little and little, according to the size of the tree, and the drought of the season, which is frequently recommended, yet has been observed very destructive to the fruit, as it causes much mould, it comes like [illegible] to the roots, which, at first taking, seem to add vigour, yet certainly leave the roots weaker after some time than before.

Your Orange-trees will require to be shifted and new-potted every other year, therefore you must procure a quantity of good earth, at least a year before you intend to use it, that it may be well mixed and [illegible] rotten. The best [illegible] for this work is about the end of April, when they may have taken root, but before they are removed out of the green-house, when they work is performed, it will be needful to let their heads in the house a fortnight longer than usual, to be well settled.

In the performing this work, first loosen down the earth round the ball, you must cut off all the [illegible] roots from the outside of the ball of earth, and take off mouldy head, if any [illegible] then clear away from [illegible] the pots as possible, but careful not to [illegible] the roots; then [illegible] the tree into a large tub of water for about a quarter of an hour, to soak the under part of the ball of earth; and afterwards [illegible] the pots with hard [illegible] cleaning them and the heads with water; and a soft woollen cloth. Your pots being prepared, with large potsherds and large stones at the bottom, put some of your fresh earth into the pot, about three or four inches thick, and having placed your tree exactly in the middle of the pot, [illegible] fill it up with the same fresh earth, pressing it down hard with your hands; then water the tree all over the head with a watering-pot, and has a reviving [illegible] to set the water full right and [illegible] as in a flower-garden; and in watering these trees down in the tubs, observe, during the time they stand in the house after shifting, this will greatly refresh their heads, and promote their taking fresh root.

When your fruit is ripe, it is time for gathering, you should place them near the house or hedges, and fasten them to [illegible] stakes, to prevent their being [illegible] by winds, which sometimes will blow fresh planted trees down; the sun, if too much applied to, [illegible] and [illegible] the fruit from their stalks, [illegible] all sorts of [illegible] fruit, [illegible] [illegible] [illegible]

with fresh earth, you must also wash and clean their stems and leaves from filth, which will greatly strengthen their flowering, and cause them to shoot vigorously the following summer.

In the management of Orange-trees which are in good health, the chief care should be to supply them with water duly, instead of leaving them in winter, as is sometimes practised, whereby their fibres are dried, and become mortified to the great prejudice of the trees; and not to give them water in too great abundance, but rather to let their waterings be frequent, and given in moderate quantities. You must also observe, that the water has free passage to drain off; for if it be detained in the tubs or pots, it will rot the tender fibres of the trees. During the winter season, they must have a large share of air when the weather is favourable; for nothing is more injurious to these trees than stifling them, nor should they be placed too near each other in the green-house; but let them at such distance, that their branches may be clear of each other, and that the air may circulate freely round their heads. In summer they should be placed where the winds are not violent, and to have the morning and evening sun; for if they are too much exposed to the mid-day sun, they will not thrive. The best situation for them is near some large plantation of trees, which will break the force of the winds, and screen them from the violent heat of the sun. In such a situation they may remain until the beginning of October, or later, according as the season proves favourable; then if they are carried into the green-house early, and the autumn should prove warm, it will occasion the trees to make fresh shoots, which will be weak and tender, and so liable to perish in winter: and sometimes it will occasion their flowering in winter, which greatly weakens the trees; nor should they remain so long abroad as to be injured by receiving frosts. The best compost for Orange-trees is two thirds of fresh earth from a good pasture, which should not be too light, nor over stiff, but rather a hazel loam; this should be taken about ten inches deep with the sward, which should be mixed with the earth to rot, and one third part of neat's dung; these should be mixed together, at least twelve months before it is used, observing to turn it over every month, to mix it well, and to kill the worms; this will also break the clods, and cause the mould to be finer. Before you make use of this earth, you should passit through a rough screen, to separate the great stones and the roots of the grass therefrom; but by no means sift the earth too fine, for this is very prejudicial to most plants, but particularly to Orange-trees.

Of late years there have been many of these trees planted against walls, against which frames of glass are made to fix over them in winter; and some few curious persons have planted these trees in the full ground, and have erected moveable covers to put over the trees in winter, which are so contrived as to be all taken away in summer: where these have been well executed, the trees have made great progress in their growth, and produced a much larger quantity of fruit, which have ripened to well, as to be extremely good for eating. If these are planted either against walls with design of training the branch to the walls, or in borders at a small distance, so as to train them up as standards, there should be a contrivance of a fire-place or two, as proportion to the length of the wall, to warm the air and the whole length of the wall, to warm the air in very cold weather, otherwise it will be very difficult to preserve the trees in very hard winters alive; or if they do live through the winter, they will be so much weakened by the cold, as not to be recovered the following summer to a proper strength for bearing: so that wherever the trees are intended to be placed against or near old walls, the flues should be built up against the front, allowing four inches thickness of the brick-work on each side the flues, observing to fasten this with irons, in proper manner, to secure it from separating from the old wall. Where this contrivance is made, there will be no hazard of losing the trees, in the winter, even in severe, with a little proper care; whereas, if this is wanting, there will require great care and trouble to cover and uncover the glasses every day, when there is any sun; and if the wall is not thicker than they are usually built, the frost will penetrate through the walls in severe winters, so that covering and securing the glasses of the fruit will not be sufficient to preserve the trees, be it done with ever so much care; therefore the first expence of the walls will save great trouble and charge, and be the cheapest method.

If the ground is wet, or of a strong clay, so as to detain the moisture, the borders should be raised above the level of the ground, in proportion to the situation of the place: for where the wet lies in winter near the surface, it will greatly prejudice, if not totally destroy the trees; in that case, gravel should be laid at least two feet thick on the bottom of the border, to drain off the wet; and upon it should be laid two and a half, or three feet thick thereon, which will be a sufficient depth for the roots of the trees. In these borders there may be a few roots of the Guernsey and Belladonna Lilies and Hæmanthus planted, or any other exotic bulbous-rooted flowers, which do not grow high, or draw too much nourishment from the borders; and these, producing their flowers in autumn or winter, will make a good appearance, and thrive much better than if kept in pots.

The management of the Orange-trees in these places, is nearly the same as has been directed for those in pots or tubs, excepting that the roots in these places should be dug, and refreshed with some very rotten dung every year.

It is commonly said, that the Maltese-bred Oranges are budded on the Pomegranate; and that the Orange grafted or budded on Mulberry stocks in Sicily produces a fruit with a blood-coloured pulp: but these accounts of travellers are apocryphal.

The China, dwarf Orange, Shaddock, and those with striped leaves, are all more tender than the Seville Orange, and therefore must be treated with more care, and placed in a warmer part of the green-house in winter. The China Orange rarely produces good fruit in England, nor are the leaves of the tree near so large or beautiful as those of the Seville Orange; the latter, therefore, should be preferred, and only a tree or two of the China sort kept for variety. The varieties with striped leaves never produce good fruit, nor do they produce sweet flowers in so great plenty as the plain ones.

*Citrus.*

The several sorts of Citrus are cultivated much in the same manner as the Orange-trees, but they are somewhat tenderer than the Orange, and should therefore have a warmer situation in winter, otherwise they are very subject to cast their fruit. They should also continue a little longer in the house in the spring, and be carried in again sooner in the autumn, as they love a warmer and better defended situation in the winter, though not too much exposed to the sun in the heat of the day.

And as these leaves are larger, and their fibres stronger, than those of the Oranges, they require a little more water with summers, and in winter they should have but little, and at every time which should be discoloured, appear dry. The soil ought to be much the same for the Citrus-tree as for the Orange, but not quite so strong.

The common Citron is such the best stock to bud any of the Orange or Lemon kinds upon; but any of the Orange or Lemon kinds upon it, being the strongest and most growing tree. The Lemon is tenderer, and the worst to be known, than those of the Orange or Lemon; and will take cold after the Orange or Lemon kinds, which is what some few of the other sorts will do: these trees, if properly managed, will be very fine, from the leaves and flowers, as well as the fruit; and will have a fine effect when cut to proper [illegible] shapes

whereas it often happens, when theſe buds are inoculated into weak ſtocks, they frequently die, or remain till the ſecond year before they put out; and thoſe that ſhoot the next ſpring after budding, are oftentimes ſo weak as hardly to be fit to remain, being incapable of making a ſtraight handſome ſtem, which is the great beauty of theſe trees.

*Lemon and Lime.*

Theſe are propagated by budding or inarching on Lemon or Citron ſtocks, produced from ſeeds; but they will not ſo readily unite on Orange ſtocks.

Their culture is the ſame with that of the Orange: but the common Lemon is ſomewhat hardier, and requires a greater ſhare of freſh air in winter; for which reaſon, Lemon trees ſhould always be placed nearer to the doors or windows of the green-houſe. In ſome curious gardens theſe trees have been planted againſt walls, where, by covering them with glaſſes in winter, and protecting them from ſevere froſts, they have produced plenty of large fruit. As theſe trees generally produce ſtronger ſhoots, they require more water than the Orange. As to the more tender ſorts, they muſt be treated with a little more care, otherwiſe their fruit will fall in winter.

CIVES. See *Allium*.

END OF PART I. VOL. I.

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